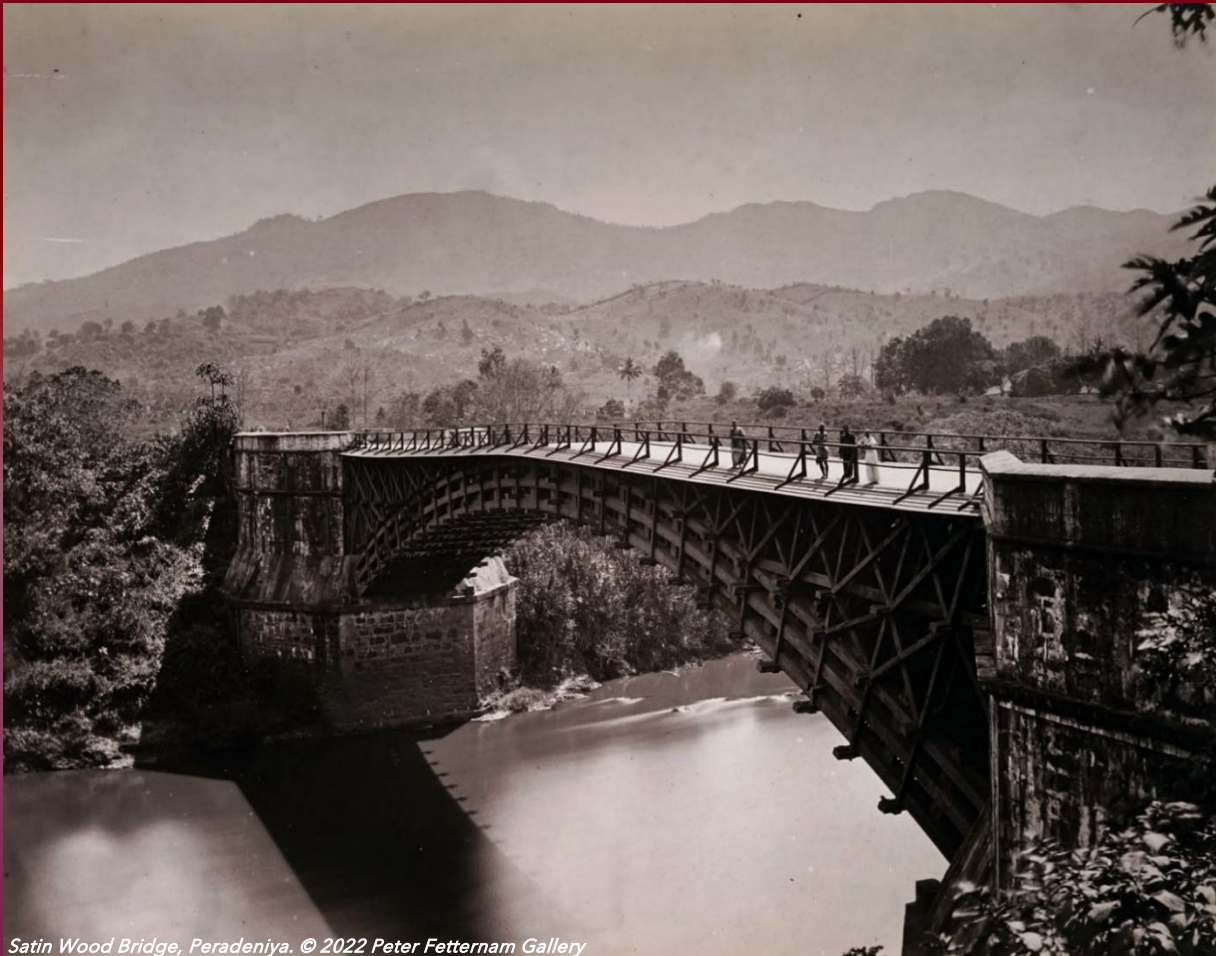


PeMSAA Newsletter



Peradeniya Medical School Alumni Association

December 2022



Satin Wood Bridge, Peradeniya. © 2022 Peter Fetternam Gallery

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Leptospirosis: Laboratory diagnosis of acute leptospirosis in humans

According to the World Health Organization, leptospirosis is a tropical zoonotic bacterial disease caused by spirochaete bacteria belonging to the genus *Leptospira*. Leptospirosis is a common infection in both humans and animals. As it has no pathognomonic symptoms or signs it can be misdiagnosed as other common tropical infections where renal and hepatic impairment are seen. Therefore, confirmation of diagnosis is important both for appropriate patient management as well as to prevent and control disease spread. The currently known 64 species of *Leptospira* are divided into two clades which are "Pathogens" and "Saprophytes" and four subclades P1, P2, S1, and S2 based on the evidence of their phylogeneticity. "Pathogens" clade includes species that are responsible for disease in both humans and animals. Non-pathogenic species isolated from the natural environment are included in the "Saprophytes" clade. Disease transmission happens directly once the susceptible host is exposed to the infected animal's body fluids and indirectly via a contaminated environment and hosts (humans and animals). All mammalian species are susceptible and can act as reservoirs or carriers of leptospirosis, but rodents are the major reservoir animals. A single host is a primary reservoir for one serovar and can act as an incidental host for other serovars. The carrier animals excrete leptospires in their urine intermittently for variable periods ranging from several weeks up to years in their lifetime. Leptospires have been found to survive up to 180 days in moist soil with favourable environmental conditions. The course of the disease in an infected host may vary from acute, subacute, and chronic depending on the virulence of the bacterium, serovar involved, host immune response, and the exposure dose. There are no pathognomonic clinical signs for the disorders, and acute infection symptoms are comparable to those of hepatic and renal failure. As a result, without confirming testing, the condition is frequently misdiagnosed as renal failure or hepatic impairment.

Confirmatory tests are essential for diagnosing the different clinical stages of leptospirosis. Serological tests are used to identify antibodies present in an infected animal's body. Culture and isolation, direct visualization/identification (Figure 1), and amplification of nucleic acid sequences/genes specific to pathogenic leptospires are considered methods of organism detection. Leptospires can be identified using blood, urine, peritoneal and pleural exudates, or cerebrospinal fluid. Culture and isolation of leptospires may take more than six months due to the slow-growing rate of the organism and is not considered a suitable test for clinical diagnosis. Serological tests are presumable, and without paired samples (acute and convalescent stage) cannot confirm the acute disease.

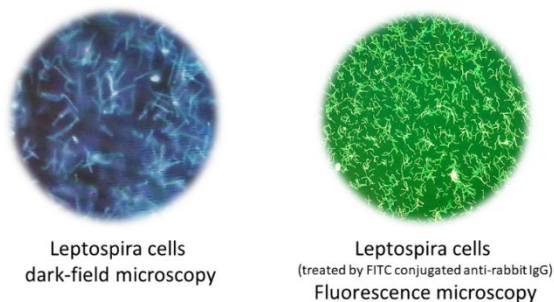


Figure 1. Visualization of leptospires by different microscopy methods

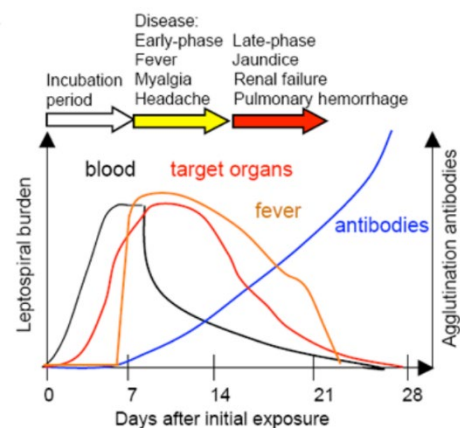


Figure 2. Schematic diagram of the kinetics of leptospiral infection and disease. Infection produces a leptospiraemia (black line) within the first days after exposure, which is followed by detection of leptospires in tissues of multiple organs (red line) by the 3rd day of infection. In humans, illness (fever, brown line) develops with the appearance of agglutinating antibodies 5-14 days after exposure (blue line). Adopted from doi: [10.1038/nrmicro2208](https://doi.org/10.1038/nrmicro2208)

Gene amplification methods such as Polymerase Chain Reaction (PCR) and other isothermal amplification methods are considered specific methods of diagnosis of acute disease in febrile patients and confirmation of urinary excretion in chronically infected humans and animals. Loop-Mediated Isothermal Amplification (LAMP) method has been recently developed to detect pathogenic leptospires targeting genes such as '*LipL41*' and '*rrs*' a *16S rRNA* gene which is low cost and can be performed in many basic laboratories. Quantitative PCR, conventional PCR, and nested PCR have also been used to detect pathogenic leptospires targeting *LipL32*, *flaB*, *secY*, and *23S rRNA*. For acute leptospirosis confirmation, in the first seven days after the onset of clinical signs, blood is the most suitable sample because that period belongs to the leptospiremic phase of acute leptospirosis (Figure 2). After seven days, leptospires invade the immune safe sites such as proximal convoluted tubules of the kidneys and are retained there while being excreted intermittently. Therefore, during that period, urine is the most suitable sample for diagnosing leptospirosis, but due to intermittent shedding, there may be false negative results.

Several serological test methods have been described to detect infections, including the Microscopic Agglutination Test (MAT), Enzyme-Linked Immunosorbent Assay (ELISA) capable of detection of IgM and IgG anti-leptospiral antibodies, Fluorescence Antibody Test (FAT), complement fixation test, indirect immunofluorescent test, hemagglutination test, and latex bead agglutination test to detect antibodies against leptospire. Paired serum samples-based MAT is the gold standard test for confirming acute leptospirosis by serology. ELISA and MAT are the most used serological tests worldwide.

According to the World Health Organization (WHO), there are more than approximately 500,000 leptospirosis cases reported worldwide annually with approximately 50,000 deaths. Sri Lanka is one of the countries where leptospirosis is endemic since the 1970s. According to the epidemiology bulletin, 3601, 5257, 6021, 8579, and 6946 clinically assumed human leptospirosis cases have been reported in 2017, 2018, 2019, 2020, and 2021 respectively in Sri Lanka. Further, there were reported cases of leptospirosis in domestic and companion animals. Such animals can be a source of infection to humans because they act as carriers. Previous research studies confirmed acute leptospirosis in companion dogs and chronic carrier stage in apparently healthy companion dogs that live in the Kandy district. Other than that, apparently healthy domestic elephants, cattle, rats, and small wild animals were also identified as chronic carriers for the disease, and they excreted *L. interrogans*, *L. borgpetersenii*, *L. kmetyi*, *L. weilii*, and *L. wolffi*, etc., based on the evidence generated through previous studies. Therefore, there is a potential risk of directly transmitting leptospirosis to animal handlers, companion animal owners, farmers, and veterinarians. One previous study has shown pathogenic leptospire isolation from water samples collected from paddy land associated water bodies located in Kandy district. Study results support that the potential of indirect transmission of leptospirosis to susceptible hosts including humans.

Under the 'One Health' concept prevention and control of leptospirosis is very important to achieve the sustainable development of goal 3 "Good health and well-being" and goal 6 "clean water and sanitation". The definitive diagnosis of the disease needs to be carried out in suspected febrile patients as soon as possible before starting appropriate antimicrobial therapy. As leptospirosis symptoms and epidemiology resembles many other tropical diseases especially prevailing viral diseases, one should consider proper diagnosis before administration of antibiotics. This will further support the prevention of misuse of antibiotics, developing antibiotic resistance, and environmental contamination.



People at risk need to use personal protective equipment while handling infected dogs and other domestic animals. Medical practitioners should consider obtaining a confirmation of the diagnosis from a suitable laboratory. Providing samples before antibiotic administration is important for confirming diagnosis in humans.

Prof. Chandika Gamage
BVSc, PhD (Japan)
Department of Microbiology
Faculty of Medicine
University of Peradeniya

Obituary: Dr. Joel Fernando

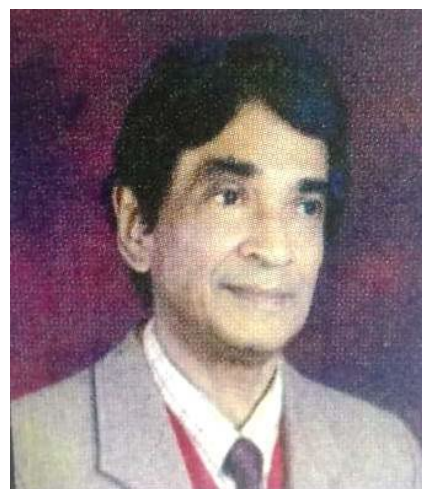
The demise of Joel Fernando saddened us, his batch-mates of the pioneering batch of 1962. He was a livewire in the batch, the first President of Peradeniya Medical Students Union, and if I remember right, he held the Presidency of the Peradeniya University Students Union. Always cheerful, full of theories, never a word of slander and ever willing to take the lead. He was a strong socialist at heart. As a member of the A-hall 'boys' at the time, he was very popular and always welcome in any room at any time for a chat.

In later years as a popular General Practitioner, he was the President of its Independent Medical Practitioners Association (IMPA) and the President of the Organization for Professional Associations (OPA). Latterly he was involved with Training of Family Practitioners by the PGIM.

He went on to become the first President of the newly minted Peradeniya Medical School Alumni Association (PeMSAA) in 1992. He came back as guest of honour at the 2012 Faculty Jubilee jointly held with the 11th International Medical Congress, to see a thriving PeMSAA.

I recollect the many parties at his home in Dehiwala, in our student days, in which his family would join in, the eventual sing song late into the night. He leaves behind his wife Anula, and daughter, Sunera and son, Jivendra.

Channa Ratnatunga - Batch mate



Building a Library for the Primary Section of Sarasavi Uyana College, Peradeniya

As its main community-related project for 21/22, PeMSAA undertook the task of founding a library for the newly established Primary Section of Sarasavi Uyana College, Peradeniya. When the request was brought forward by the College earlier in 2022, it was enthusiastically accepted by PeMSAA. Several discussions were held between the Principal and the representatives of the PeMSAA Council before a comprehensive plan was agreed upon. Initially a suitable room was identified in the four-storey building which was then under construction. Moving along with the latest trends in education, instead of a conventional library limited to books, PeMSAA decided to establish a student-friendly learning environment enriched with reading material as well as multimedia. Thus, PeMSAA was meticulous about each and every aspect. A collection of 350 books suitable for the age group was assembled from the donations of numerous well-wishers. A computer and a projector were considered mandatory. The furniture was custom-made to be appropriate and colourful. The medical students of the Faculty provided their support by drawing a beautiful mural on the library wall.



Building construction was delayed with the prevailing crisis in the country, which becoming an obstacle to the project. Yet, as soon as the space was made available to PeMSAA, the rest of the activities moved forward smoothly, bringing the task to its completion within about a year. The ultimate result was a wholesome library space that surpassed the initial expectations of us all.



The opening ceremony was held on 28th of October, 2022 with the participation of PeMSAA, and its President Prof. Thushara Kudagammana as the Chief Guest. The event was short but lively and full of colour several performances by the students. Afterwards, the members of PeMSAA did not forget to make a short visit around the College premises. PeMSAA pledged to follow up with project and provide more support in the future as well.

From the 21/22 Council, Dr. Ajantha Ranasinghe spearheaded the project. PeMSAA is immensely grateful to its membership and well-wishers for the numerous donations received, as money, books and other materials.



Achievements of PeMSAA Alumni

Appointed to the Global Preparedness Monitoring Board – Dr. Palitha Abeykoon

PeMSAA council member and erudite product of Peradeniya Medical School, Dr. Palitha Abeykoon has been appointed to the high-level Global Preparedness Monitoring Board (GPMB) by the World Health Organization and the World Bank.

The Global Preparedness Monitoring Board (GPMB) is an independent monitoring and accountability body to ensure preparedness for global health crises. It is co-convened by the Director-General of the World Health Organization and the President of the World Bank Group. The GPMB is comprised of globally-recognised leaders and experts from a wide range of sectors, including medicine, global health, veterinary epidemiology, environment, human rights, economics, law, gender, and development. GPMB is tasked with providing an independent and comprehensive appraisal for policy makers and the world about progress towards increased preparedness and response capacity for disease outbreaks and other emergencies with health consequences. In short, the work of the GPMB is to chart a roadmap for a safer world.

Recently, he was one of the WHO Director-General's Special Envoys for COVID-19. He is Senior Advisor to the Ministry of Health of Sri Lanka and serves on the National Advisory Committee on Communicable Diseases. A former president of the Sri Lanka Medical Association, Dr. Abeykoon serves as a member of the WHO Global Learning Academy and the Regional Director's Research Advisory Committee.

Dr. Abeykoon incidentally was the first medical student to be registered at the inception of the Peradeniya Medical Faculty and currently serves PeMSAA as a member of the Advisory Panel. As the PeMSAA council and members, we wish him a great success in this prestigious position along the road map of improving the global health.



Upcoming Events: PeMSAA International Congress 2023

PeMSAA is delighted to announce its 16th International Medical Congress to its membership and the medical fraternity. This year too, a comprehensive academic programme covering many specialties has been already planned.

We invite members of PeMSAA, scattered all over the world, to save the date, and join us at Peradeniya in April 2023 for the Congress.

We believe that it is the right time to visit Sri Lanka, catch up with old friends and teachers, visit the faculty that nurtured and supported you that still has familiar places and faces, and take a walk around the university to re kindle old memories. Your presence and support will certainly help the faculty to face current challenges it is faced with.



Peradeniya Medical School Alumni Association (PeMSAA)

**16TH INTERNATIONAL
MEDICAL CONGRESS**

"Delivering Holistic Patient Care Amidst Challenges"

27th and 28th April, 2023
Kandy, Sri Lanka

Highlights:
Inauguration
Congress Lecture
PeMSAA Dinner
Comprehensive Scientific Programme
Felicitation of Past Teachers
Pre Congress Workshops

Calling alumni scattered world over to join in

Save the dates, and await further details.

www.pemsaa.org.lk pemsaa.temp@gmail.com

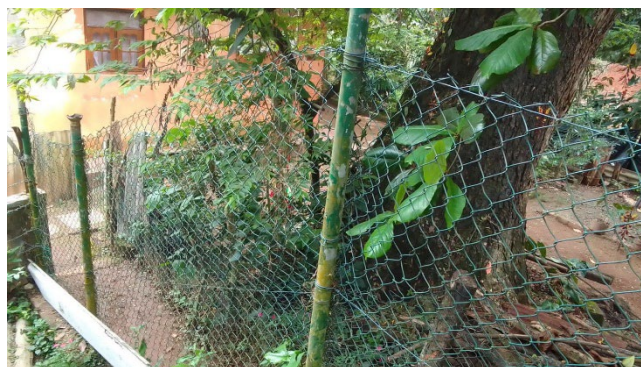
Donation of an audio player by Prof. W.A.T.A. Jayalath

With the intention of creating a relaxing atmosphere within the Faculty Canteen, Prof. W. A. T. A. Jayalath donated an audio player, and went the extra mile to personally supervise it being mounted.



Repairing the Fence behind the Preclinical Block

The fence marking the boundary of the Faculty premises behind the Preclinical block was repaired with PeMSAA providing necessary materials.



Christmas Carols and Dinner at Elders' Home, Mahaiyawa – Joint Event with KSM

The annual event of Christmas Carols at the Elders' Home at Mahaiyawa was organized this year as well as a joint event with the Kandy Society of Medicine (KSM). Reverend father initiated the occasion with prayers wishing for happiness, prosperity and peace. The medical students led the carols with the enthusiastic participation of the KSM and PeMSAA members. The elders cherished the moment joining with the singing and dancing to the rhythm. This was followed by dinner which was enjoyed together by everyone. In addition, packs of dry food rations were also distributed. As tokens of appreciation, the members of KSM and PeMSAA received colourful papier-mâché ornaments handmade by the elders.

CHRISTMAS CAROLS Thursday 22nd December 2022 5 P.M. Onwards

JOINTLY ORGANIZED BY **KSM & PeMSAA**

will be performed at **Elders Home-Mahaiyawa.**

Those who are interested in singing are cordially invited.

Dinner with elders at 6.30 p.m.

PLEASE CONTACT :
DR. WASANA KIRDANA (071 227742), DR. RANMINI WIJEKON (077 7282654)

FOR DONATIONS OF FOOD & GIFTS, CONTACT KSM OFFICE :
DULANJALI (077 9544474), SUPUN (070 7207702)



News from overseas PeMSAA Chapters; PeMSAA – UK



Greetings from UK!

Dear PeMSAA Alumni, it is both a great pleasure and honour to be invited to pen a few words as the President of PeMSAA-UK. The vision of the PeMSAA-UK is to foster and promote welfare of the Peradeniya Medical Faculty. We aim to do this by sharing knowledge, skills and also sponsor activities. Our partnership with PeMSAA and the faculty has grown from strength to strength in recent times and this has paved the way for us to do some collaborative projects which are benefiting under graduate as well as post graduate trainees.



New PeMSAA - UK Committee: First row, left to right: Prof. Ram Swaminathan, Dr. Lional Samarasinghe, Dr. Ashan Gunaratne, Dr. Krish Radhakrishnan, Dr. Gayathri Wathuge, Dr. Uditha Jayatunga. Second row: left to right: Dr. A.M.S. Abeysekara, Dr. Metta Palipane, Dr. Ranjan Gunasekara, Dr. Pradeep Sundaralingham, Dr. Shanka Beneragama. Third row: left to right: Dr. Lal Jayasekara, Dr. Aruni Molagoda, Dr. Yasasthri Athapattu.

My vision is to further strengthen this collaboration. I'm confident and determined that, along with my committee, we will continue to accomplish our mission. We will continue to provide financial aids, enhance academic and research activities, improve the welfare of the students and share professional expertise. It is my fervent hope that we will be able to work with Dean, Faculty of medicine: Professor Vasanthi Pinto, President PeMSAA: Professor Thushara Kudagammana and his committee to achieve these goals in the coming years!

Finally let me take this opportunity to invite PeMSAA Alumni to our International Academic Conference to be held at University of Oxford on the 11th November 2023.

Thanking you,

Dr Ashan Gunaratne
President PeMSAA-UK



PeMSAA Australasia

7th PeMSAA Australasia conference was held on 8th and 9th October 2022 at Sofitel Darling Harbour, Sydney and it was a great success. It composed on numerous keynote addresses and guest lectures delivered by eminent clinicals and health researchers.



Donations to PeMSAA Students Crisis Fund

The PeMSAA Student Crisis Fund was established to help Peradeniya medical students during an acute personal crisis such as serious personal health problems, serious health problems of parents or guardians including sudden death or permanent disability and loss of houses due to natural disaster etc. We welcome donations, either as one-off donations or as regular monthly sums to the fund. We sincerely hope our alumni will generously donate to this cause, remembering how difficult life could sometimes be during undergraduate years. The details of the fund are as follows.

Name of account: 'PeMSAA Student Crisis Fund', Account number: 87997354, Bank name: Bank of Ceylon Bank branch: Super Grade Branch Peradeniya, Swift code: BCEYLKX



PeMSAA
Peradeniya Medical School
Alumni Association



Memorabilia



Now available for purchase at the PeMSAA office and via online orders

<https://www.pemsaa.org.lk/more/publications-merchandise/memorabilia.html>

Becoming a PeMSAA member

The eligibility for membership is from two main categories; past graduates of the Faculty of Medicine, Peradeniya and academic staff members of the Faculty of Medicine. All the consultants (extended staff) irrespective of their faculties, who are involved in teaching of medical students of the Faculty of Medicine, Peradeniya and at the teaching hospitals are welcome to join.

Details of the membership is available at: <https://www.pemsaa.org.lk/membership/how-to-become-a-member.html>

Contact PeMSAA

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