Infectious Diseases in Southern India

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- Vellore is a North-Eastern city of Tamil Nadu, a South Indian state
- Located 84 miles West of Chennai and 130 miles East of Bengaluru
- Population: 484,690
- Home to Christian Medical College (CMC)
Christian Medical College

- Network of Primary, Secondary, and Tertiary care facilities founded in 1900 by American Missionary, Dr. Ida Scudder
- Serves over 9,000 outpatients & 2,000 inpatients per day
- Infectious Disease Unit founded in 2002
- IDTRC (Infectious Disease Training and Research Centre) established in 2005

Vision Statement:

“The Christian Medical College, Vellore seeks to be a witness to the healing ministry of Christ, through excellence in education, service and research.”
Global Health Competencies

- Demonstrate appreciation for the language and culture of a non-American and/or non-English speaking population
  - There are over 1600 languages spoken in India. Many times physicians cannot understand patients and have to make inferences in order to provide them with medical care. Though English is spoken in the medical community, I often found it hard to understand people since conversations are soft and fast. There were many situations where I felt uneasy and confused, even when the people around me were communicating in English.
Global Health Competencies

• Compare and contrast the health care system and services of the United States with other countries
  ➢ Access to healthcare, clean water, nutrition and sanitation are huge barriers in India. It is also difficult for patients to find high-quality, affordable care. Insurance coverage is not mandatory and most costs are covered out-of-pocket. National movements have been implemented, however, to provide free or low-cost care for patients in public hospitals.

• Understand the incidence, prevalence, and risk factors for disease in international populations
  ➢ I completed a one-week rotation in Infectious Disease at the main campus of Christian Medical College. I also spent a day at the Research & Leprosy Centre of Karigiri. The variety of diseases and how they differ from what we see in the United States prompted me to focus on this topic.
Infectious Diseases Training & Research Centre

- Head of Department: Dr. Priscilla Rupali
  - Department has 20 inpatient beds and sees 130-150 outpatients per day
- Common diseases treated include:
  - Tuberculosis, HIV, Typhoid, Scrub Typhus, Malaria, bone & joint infections, Endocarditis, Pneumonia, Hepatitis, Meningitis, STIs, UTIs, post-surgical infections, fungal infections and water-borne diseases like Cholera
Geographical Information System

- All 73 villages in Vellore have been mapped using Geographical Information System (GIS) software, which is based in the Community Health and Development Center (CHAD).
- Additionally, every house in these villages, as well as water, sewage and waste disposal are currently being mapped using Global Positioning System (GPS) and are being added to the database.
- These systems provide a way to monitor disease outbreaks within the community so that interventional programs can be launched within the areas affected, thus reducing further spread of disease.
- The Community Health Department is currently focusing on research in communicable diseases, STI, Rheumatic fever and rheumatic heart disease, streptococcal throat infection, Tuberculosis and diarrheal diseases in childhood.
Tuberculosis

• India has the highest burden of TB of any country in the world
• The incidence of disease is so high that typically only sputum-positive patients are placed in isolation, regardless of clinical picture
• In Tamil Nadu, Primary Health Centers like CHAD are proven to provide lower cost and guideline-based treatment compared to private health facilities
• Vellore is one of the 3 districts in India where sputum test for detecting TB is done through an LED microscope, which has increased the case detection rate by 20%
• The Revised National TB Control Program (RNTCP) began providing free TB treatment for patients through governmental initiative in 2007, as Total-Drug-Resistant TB has emerged and is contributing to the TB epidemic
• In Vellore, detection rate has risen to 92% and cure rate is 88%, higher than the national goal of 85%
• Public initiatives have surfaced throughout India emphasizing proper respiratory sanitation including wearing masks and refraining from spitting in public areas
Infectious Diseases - HIV/AIDS

- CMC was selected as one of four national centers for training physicians in the administration of anti-retroviral therapy as part of the WHO initiative.
- Vellore offers 91 Integrated Counseling and Testing Centers (ICTC).
- The prevalence of HIV in Vellore decreased from 5.5% in 2001 to 0.8% in 2014.
- In 2017 the government implemented a “test-and-treat” policy that commits to treating patients as soon as they are positive. Previously, they were not eligible for free treatment unless their CD4 counts dropped below 500.
- Compared to the US, India does not see as much HIV drug resistance; therefore they initiate ART therapy without completing susceptibility testing.
- In March of this year, the “HIV/AIDS Bill” was passed, which ensures equal rights to the people affected by HIV and AIDS in getting treatment, admissions in educational institutions and jobs.
Infectious Diseases - Leprosy

- Leprosy affects a quarter of a million people across the world, with the most cases reported in India
  - The National Leprosy Eradication Program is one of the largest leprosy groups in the world
- Schieffelin Institute of Health – Research & Leprosy Centre in Karigiri
  - Coordinated care integrating inpatient, outpatient, PT, psychology, prosthesis and rehab services
  - Psychology department helps reduce social stigma within patient families and the community
- Shanthigramam - “village of peace”
  - Haven for aged, destitute persons who once had leprosy. Many patients live with permanent deformities and are rejected by their families due to the social stigma. This facility provides a home where they can live and die with dignity
Conclusions & Recommendations

• Geographic Information Systems are pivotal for identifying disease outbreaks in rural/urban communities so interventions can be implemented.

• Primary Health Centers are preferred to Private Health Facilities for patients with TB due to lower cost and more efficient, timely treatment.

• Social engagement and awareness of isolating diseases like Leprosy and HIV are beneficial to patients and their friends/families to help battle surrounding stigma.

My Future Practice

This experience has offered me a new perspective on what health care and access to care looks like in a country that has barriers so different from our own. I want to continue drawing on knowledge and experience from different situations, people, and places, so I can comfortably connect with and help treat a variety of patients.
Most Meaningful Clinical Experience

Schieffelin Institute of Health – Research & Leprosy Centre

This facility was so tranquil and organized; very different from the congested, high velocity atmosphere of CMC. I felt extremely welcome in each of the departments we rotated through. We learned about so many facets of Leprosy care including how prosthetics and shoes are made for patients. We even got to visit the researchers, who have made nation-wide strides in Leprosy research. It was wonderful to see that these patients are getting superb multi-disciplinary, coordinated care.
Indian Wedding
We had the opportunity to attend an Indian wedding in Chennai. The amount of energy and color that are incorporated into weddings in India is spectacular. The bride, groom, and guests were very welcoming and encouraged us to participate in everything. It was such a unique and exciting experience.
A special thank you to Dr. Mani & KUMC OIP
References

- http://www.cmctropmed.com/
- http://www.cmch-vellore.edu/
- http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0191591