

**Diploma in
Tropical
Medicine &
Hygiene
(DTM&H)**

LSTM

LIVERPOOL SCHOOL
OF TROPICAL MEDICINE



Programme

Handbook

Autumn

2019

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

Dear Students,

A very warm welcome to Liverpool and the School of Tropical Medicine!

LSTM was founded over one hundred years ago and was the first institute in the world devoted to the study of medicine and health in the tropics. We are proud of our tradition and our achievements and can claim to lead the world in a number of important areas of research. Through our research and scholarship, and our close working links with colleagues, universities and governments in low and middle income countries, the staff involved in our many teaching programmes bring a unique blend of experience and innovation to their work.

Our mission is to reduce the burden of sickness and mortality in disease endemic countries through the delivery of effective interventions which improve human health and are relevant to the poorest communities. Many of our students go on to make highly significant contributions to fulfilling this mission and maintain long-term links with the School.

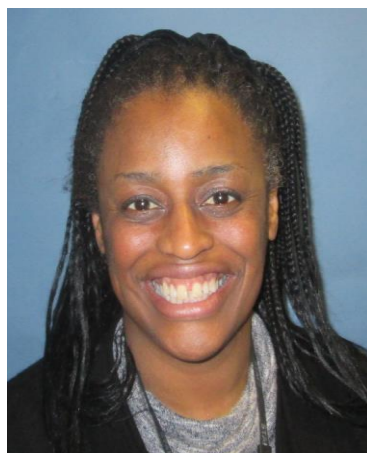
We trust that you will find LSTM a friendly environment to foster your studies and we are sure you will also find Liverpool to be a warm and welcoming city.

On behalf of all the staff, we wish you an interesting, informative and, most of all, an enjoyable time here.

Professor David Lalloo
Director LSTM



Dr. Angela Obasi
Co-Director of Studies
DTM&H



Professor Stephen Allen
Co-Director of Studies
DTM&H



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Programme introduction

Since 1898, the School of Tropical Medicine trains students from all over the world. LSTM established the Diploma in Tropical Medicine in 1904, the forerunner to the current Diploma in Tropical Medicine and Hygiene (DTM&H).

The aim of the Liverpool DTM&H is to equip physicians with the knowledge and skills needed to practice medicine and promote health effectively in resource-limited environments.

As well as developing your knowledge of the clinical presentation, diagnosis and management of major diseases, we aim to provide you with a much broader perspective on important diseases. You will study biological details essential for the identification and diagnosis of major pathogens and disease vectors and critically review principles of epidemiology and public health essential for disease control, elimination and eventual eradication. You will enhance your skills in critically appraising the evidence that underpins modern approaches to improving health, review how global health policies are applied in low and middle income countries and develop skills needed to manage health programmes in these settings.

The curriculum is organised into four broad themes: Tropical Medicine; Maternal, Newborn and Child Health; Parasitology and Vector Biology; Public Health. Teaching in diseases with a high burden, such as malaria, HIV and TB, will be done from various perspectives, including laboratory diagnosis, clinical medicine and disease control as part of public health strategies to illustrate how an integrated approach is applied to improving health and well being.

Although the DTM&H is a highly intensive course with lectures, practicals, tutorials and seminars, we encourage you to engage with the wider School community. We have an active lunchtime seminar series with world-leading experts from the UK and overseas. Please do look out for those that may be of interest to you and come along. Also, you will gain much from engaging with our students on other programmes about their experiences in many different countries and also disciplines such as biological science, nursing, humanitarian assistance and public health. Do take advantage of this mix of students.

Please read this handbook alongside other two other key resources to support your studies here in Liverpool:

- A Student Guide to LSTM
- LSTM Professional Diploma and Certificate Student Handbook

The DTM&H is recognised as fulfilling part of the requirements for the American Society of Tropical Medicine and Hygiene Certificate in Travel Medicine.

Contact details

Staff from all LSTM departments are involved in teaching your course; please feel free to approach them with any questions or concerns that you may have. In particular, DTM&H students are welcome to contact the following people:

Dr. Angela Obasi; Co-Director of Studies
1966 wing, second floor, room 202; Tel ext: 3102 (external 0151 705 3102)
<http://www.lstmed.ac.uk/about/people/dr-angela-obasi>
e mail: Angela.Obasi@lstmed.ac.uk

Prof. Stephen Allen; Co-Director of Studies
Maegraith wing; Room M-215; Tel ext: 3102 (external 0151 705 3752)
<http://www.lstmed.ac.uk/about/people/professor-stephen-allen>
e mail: Stephen.allen@lstmed.ac.uk

Registry*; LSTM course administrators
1966 wing, first floor, room 102; Tel ext: 3232
studentsupport@lstmed.ac.uk

*Please use the Student Support Desk on the ground floor of the main LSTM building as your first port of call for any programme enquiries. The desk is manned from 8.30am -10.00am and 1.00pm-2.00pm

Please note that general communication between staff and students takes place through BrightSpace (the virtual learning environment [VLE]) and/or your official LSTM e-mail address (e.g. studentnumber@lstmed.ac.uk). Please ensure that you check these on a regular basis.

Theme leads

Tropical Medicine
Dr Tim O'Dempsey



Public Health
Mary Lyons



Maternal, Newborn and Child Health
Dr Charles Ameh and Prof Stephen Allen



Parasitology and Vector Biology
Dr James LaCourse and Dr Philip McCall



Topic Leads

HIV
Dr Paul Hine



Tuberculosis
Dr Tom Wingfield



Non-Communicable Diseases
Prof Geoff Gill



Malaria
Prof Feiko ter Kuile



Critical Appraisal
Prof Paul Garner



Theme and topic leads are engaged in active research programmes as part of the LSTM world-leading portfolio of research, much of which is based in the developing countries of the tropics. Research ranges from studies devoted to improved delivery of health services to poor and disadvantaged populations, through social science research and clinical intervention studies, to basic studies in the molecular sciences, genomics and immunology of communicable diseases. There are also laboratory-based programmes, particularly in the area of parasitic and other communicable diseases.

Research is broadly organised under research groups; more detail can be found in Divisional entries <http://www.lstmed.ac.uk/research>. If you are interested in the many research opportunities at the School, please discuss this with the theme and topic leads and Directors of Studies.

Aim of the course

To equip physicians to apply the knowledge and skills needed to practise medicine and promote health effectively in resource-limited environments. The emphasis is on diseases that cause the greatest burden of ill-health in tropical climates, but we will also cover common conditions that occur in non-tropical, low-resource settings.

Course learning outcomes

Knowledge and understanding

Upon successful completion of the course, you will be able to:

- Explain the epidemiology, clinical presentation, diagnosis and management of major communicable, non-communicable and neglected diseases
- Summarize the main biological characteristics of insect vectors of disease, and explain their relevance in the epidemiology and control of communicable diseases
- Explain and illustrate the importance of social, cultural and economic factors on health care preventive and curative services and disease control programmes

Cognitive skills

Upon successful completion of the course, you will be able to:

- Critically analyze and synthesize information from research, routine health statistics, health policy and clinical guidance
- Intelligently apply formal evidence and programme management principles to overcome complex health and health system challenges affecting vulnerable groups

Practical and professional skills

Upon successful completion of the course, you will be able to:

- Identify and review the role of important pathogens in the diagnosis of diseases
- Identify relevant insect vectors responsible for causing and transmitting human disease
- Lead or participate in a health professional team managing commonly encountered clinical problems
- Be able to design strategies to assess health status in communities
- Design programmes, prepare action plans, and evaluate approaches for effective public health interventions for vulnerable populations, including those affected by conflict and disaster

Detailed learning outcomes for themes (clinical tropical medicine; maternal, newborn and child health; parasitology and vector biology; public health) are included in Appendix 1.

Learning & Teaching Strategy

The DTM&H is a wide-ranging programme that draws on the personal experience of the teachers and many of the students. Biographical information and contact details of academic staff are available on the LSTM web site www.lstmed.ac.uk.

The learning and teaching strategy recognises the effectiveness of small working groups for building capacity in problem solving, analytical thinking, synthesizing information from multiple sources and evaluating it from different perspectives. The cosmopolitan nature of the student cohort greatly adds value to this activity.

Practical classes/sessions extend the learning experience and enable you to develop a number of hands-on skills. They are supported with a range of demonstration materials, and overseen by the experienced academic and technical staff.

Face-to-face learning is complemented by group work, laboratory practicals, on-line learning and revision resources

You have access to an excellent specialised library, computers and the internet across the teaching environment that provide additional learning resources.

Attendance: The DTM&H is a full-time programme and students are expected to attend all timetabled lectures, practicals and seminars unless otherwise indicated. The normal hours of attendance are: 9am – 5pm Monday to Friday.

Programme management

The DTM&H Board of Studies assists the Directors of Studies and Programme Administrator in the management of the programme. Minuted meetings are held regularly. The Board's membership and the Terms of Reference are set out in Appendix 2.

External Examiners: Three external examiners are appointed who have considerable expertise in the three core areas of tropical medicine, parasitology/vector biology and public health. Their role is to:

- advise on programme content in relation to the aims and objectives
- assist the programme committee in the formulation of examination papers
- assist and advise the Examination Board in making decisions on student performance including moderating a sample of examination papers
- participate in the viva examination
- contribute to the annual evaluation of the DTM&H required by the LSTM Quality Management Committee

Board of Examiners: The Board consists of the external examiners and a number of internal examiners from the academic staff of LSTM who contribute to the teaching. The responsibilities of the Board are:

- to assess student performance in accordance with regulations and agree awards
- to identify possible modifications to the course, including its objectives, assessment and content, for discussion by the course committee

Further information regarding the Board of Examiners, Assessment Regulations, and Academic Appeals Procedure are available in the Professional Diploma Handbook (on Brightspace) and on the LSTM website: <http://www.lstmed.ac.uk/study/quality-manual>

Student representation and feedback

Student Representatives: In order to enhance communication between course participants and staff, students select two representatives who will be invited to attend and contribute to DTM&H Board of Studies meetings. We suggest you also elect a social secretary to co-ordinate social activities for course participants. Previous groups have set up social media groups to help link the class socially.

Student Presentations: During the course there will be opportunities to share your experiences in clinical practice or public health relevant to LMICs. Please tell the Directors of Studies at an early stage if you would like to give a brief presentation to your colleagues.

Student feedback: Student feedback is an invaluable part of maintaining high standards in every aspect of the DTM&H. We use online student feedback methods throughout the course and these will be demonstrated to you on the first day. The immediate feedback allows us to spot potential problems quickly and find solutions to enhance your learning experience. There are also wider student surveys done later in the course and at the end; you will be sent a link to these important surveys. Feedback is reported at the Board of Studies and results inform developments and improvements to the course year on year.

You are also encouraged to discuss issues as they arise with individual lecturers, the Directors of Studies or, if you prefer, with your class representative. It is helpful if class representatives obtain points for discussion from the whole class in advance of each Board of Studies meeting.

Examples of recent improvements to the programme in response to student feedback include increased availability of e-learning resources on the VLE, an increase in the number of small group clinical problem solving sessions, re-organisation of laboratory demonstrations, better timekeeping for lectures and the way we collect feedback.

Assessment

The course assessments are designed to enable you to demonstrate a range of clinical, diagnostic, biological and public health skills, including analysing, synthesising and evaluating information, and identifying important pathogens and vectors. Both formative and summative assessment approaches are used.

Formative assessment: You will be able to track your progress through a practice multiple choice question (MCQ) and written paper during the course. The results of these assessments do not contribute to the final mark.

Revision sessions in parasitology and vector biology contain a range of practice exercises. Staff are available for immediate discussion with individuals or groups of students.

Summative Assessment: The award of Diploma is based on the results of examinations held at the end of the course. To receive the award, you must achieve the pass mark of 50% in each of the four papers (Papers 1, 2, 3 and 4). A mark between 40-49% on one only of papers 1, 2 or 3 will be deemed compensatable, provided the overall average mark achieved across all four papers is 50% or above.

Distinction is awarded to candidates who pass each assessment and score 70% and above on the final examination as a whole. *Merit* is awarded to candidates who pass each assessment and score 60 - 69% on the final examination as a whole.

Exam questions will be representative of the course content but will not cover all material from the extensive syllabus. Details of the format and weighting for the four papers is as follows:

Paper	Theme	Assessment Method	Content	Weighting	Duration	Overall Weighting
1	Clinical/ RMNCH	Written MCQ	Ans 1 out of 2 Qs 30 MCQs	30% 70%	1.5 hrs	28%
2	Parasitology/ Vector Biology	Written MCQ	Ans 1 out of 2 Qs 30 MCQs	30% 70%	1.5 hrs	28%
3	Public Health*	Written MCQ	Ans 1 out of 2 Qs 30 MCQs	30% 70%	1.5 hrs	28%
4	Practical and Diagnostic Skills	Pictures of pathogens, vectors + RDTs' Microscopy	25 MCQs	60%	50 mins	16%
			1 Blood 1 Faecal	40%	40 mins	

* Public Health assessments: In the written public health paper, questions may be based on either a paper and/or a case study/scenario given to you before the exam. You will be notified of this prior to the exam and provided with appropriate information. You may be expected to perform one or several of the following tasks: critical appraisal, basic epidemiological and statistical calculations, and application of public health policy/management principles to a question. Basic calculators are provided.

MCQ questions require a single 'best' response. There is no negative marking. Marking guidelines for the written papers are shown in appendix 3 and example of the format for the Practical and Diagnostic Skills microscopy assessment is shown in appendix 4. More details and guidance regarding assessments will be provided later in the course.

Prizes in Clinical Tropical Medicine, Public Health and Parasitology / Vector Biology will be awarded at the discretion of the examiners.

Notification of exam results: We aim to release final marks to students within 4 weeks of the end of the programme. Certificates will be issued as soon as possible after the June meeting of Audit Committee.

Re-sitting examinations: If you fail any of the four papers, you may re-sit the paper on only one occasion. Re-sits will take place with the next DTM&H course; there are no re-sits between courses. The Academic Registrar/Directors of Studies will be able to advise which papers need to be repeated and passed in order to be awarded the Diploma. We offer support to those re-sitting through revision sessions and access to the VLE in preparation for the re-sit exam(s).

Reading list

DTM&H Reading List 2019

Reading has been organised by theme and separated into “essential” and “recommended reading”. Essential reading is part of the taught course and may be examined as such. The recommended reading is to help you to broaden your knowledge and will also help you extend your answers in assessments. Of course, we encourage you to read widely based on your own interests but have restricted the recommended reading given the limited time available during the course.

Many of the books listed below are available in the LSTM library and some at reduced cost from:

- Health Books International: <https://healthbooksinternational.org/>
- Tropical Health Technology: <http://www.tht.ndirect.co.uk/>

Tropical Medicine – Essential Reading

Beeching, N. and Gill, G. V. (2014) *Tropical medicine: lecture notes*. 7th edn. Chichester: Wiley-Blackwell.

A short book containing most of the core information needed on clinical tropical medicine for the DTM&H. Many of the contributors are lecturers for the course. There are linked online MCQs at <http://bcs.wiley.com/he-bcs/Books?action=index&itemId=0470658533&bcsId=8966>

Tropical Medicine – Recommended Reading

Rothe, C. (2015) *Clinical cases in tropical medicine*. Philadelphia: Elsevier Saunders.

Comprised of 76 detailed clinical cases from as many tropical medicine physicians across the world. Provides an excellent learning opportunity to reinforce concepts on practical approaches to the diagnosis, management, and treatment of the major tropical diseases.

Farrar, J., Hotez, P. J., Junghanss, T., Kang, G. and Lalloo, D. (2014) *Manson's tropical diseases*. 23rd edn. Philadelphia: Elsevier Saunders.

Authored by global experts in the field of tropical medicine, this medical reference text provides comprehensive coverage of parasitic and other infectious diseases from around the world.

Peters, W. and Pasvol, G. (2007) *Atlas of tropical medicine and parasitology*. 6th edn. Edinburgh: Elsevier Mosby.

A collection of good quality photographs of parasites, vectors and clinical cases.

Mabey, D., Gill, G., Parry, E., Weber, M. and Whitty, C. (2012) *Principles of medicine in Africa*. 4th edn. Cambridge: Cambridge University Press.

Combines classical clinical medicine with a rich understanding of the major environmental and cultural influences on health and disease, providing comprehensive guidance for anyone intending to practice medicine in Africa.

Davidson, R., Brent, A. and Seale, A. (2014) *Oxford handbook of tropical medicine*. 4th edn. Oxford: Oxford University Press.

A comprehensive pocket handbook with practical clinical advice for treating tropical diseases. A good quick reference for the field.

Kamel, R. and Lumley, J. S. P. (2004) *Textbook of tropical surgery*. London: Westminster Publishing.

The text is an encyclopaedic cover of tropical disease as it relates to the surgeon and provides an excellent and essential companion for all those working in or managing patients from tropical areas. Useful for surgeons, or others as a reference text.

Johnson, C. (2015) *Oxford handbook of expedition and wilderness medicine*. 2nd edn. Oxford: Oxford University Press.

Ethics – Essential Reading

Nuffield Council on Bioethics (2014). *The ethics of research related to healthcare in developing countries*. Available at: <http://nuffieldbioethics.org/wp-content/uploads/2014/07/Ethics-of-research-related-to-healthcare-in-developing-countries-1.pdf>

Please refer to Chapters 6 & 7 in particular; however, the whole book is of value.

Malaria – Essential Reading

White, N. J., Pukrittayakamee, S., Hien, T. T., Faiz, M. A., Mokuolu, O. A., Dondorp, A. M. (2014) [Malaria](http://dx.doi.org/10.1016/S0140-6736(13)60024-0). *Lancet*. Available at: [http://dx.doi.org/10.1016/S0140-6736\(13\)60024-0](http://dx.doi.org/10.1016/S0140-6736(13)60024-0)

An excellent overview for those new to the topic.

Maitland, K. (2015) [Management of severe paediatric malaria in resource-limited settings](https://doi.org/10.1186/s12916-014-0263-6). *BMC Med*;13:42. doi: 10.1186/s12916-014-0263-6. Review.

Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4348099/>

Specific focus on the management of severe malaria in children

World Health Organisation (2013) *Management of severe malaria – a practical handbook*. 3rd edn. Available at: <https://www.who.int/malaria/publications/atoz/9789241548526/en/>

World Health Organisation (2015) *Guidelines for the treatment of malaria*. 3rd edn. Available at: <https://www.who.int/malaria/publications/atoz/9789241549127/en/>

[Plewes, K., Leopold, S. J., Kingston, H. W. F., Dondorp, A. M.](https://doi.org/10.1016/j.idc.2018.10.002) (2019) *Malaria: What's New in the Management of Malaria?* *Infect Dis Clin North Am*;33:39-60. doi: 10.1016/j.idc.2018.10.002.

HIV – Essential Reading

World Health Organisation (2016) *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection*. Available at: <http://www.who.int/hiv/pub/arv/arv-2016/en/>

This is comprehensive and you not are expected to learn them by heart; the guidelines will help meet the learning outcomes for the HIV module and understand the use of ART in different circumstances.

HIV – Recommended Reading

Maartens, G. (2012) *Handbook of HIV medicine*. 3rd edn. Oxford: Oxford University Press.

Presents critical issues for quick reference in the urban and rural ward and is intended for clinicians practicing in under-resourced conditions. Includes guidelines on antiretroviral therapy, adult and paediatric HIV medicine, and ethical issues.

Series of articles and commentaries from an AIDS journal supplement 2013. Detailed articles on background to the WHO ART guideline

Tuberculosis – Essential Reading

World Health Organisation (2017) *Guidelines for treatment of drug-susceptible tuberculosis and patient care*. Available at: https://www.who.int/tb/publications/2017/dstb_guidance_2017/en/

To be referred to for programme management issues and treatment. Read in conjunction with other guidelines on drug resistant disease and HIV.

World Health Organisation (Various) *Guidelines for treatment of tuberculosis*. Available at: <https://www.who.int/publications/guidelines/tuberculosis/en/>

Tuberculosis – Recommended Reading

World Health Organisation (2018) *Global tuberculosis report 2018*. Available at: https://www.who.int/tb/publications/global_report/en/

World Health Organisation (2019) *Consolidated guidelines on drug-resistant tuberculosis Treatment*. Available at: <https://www.who.int/tb/publications/2019/consolidated-guidelines-drug-resistant-TB-treatment/en/>

Non-communicable Diseases – Essential Reading

Beeching, N. and Gill, G. V. (2014) *Tropical medicine: lecture notes*. 7th edn. Chichester: Wiley-Blackwell.

Please refer to Chapter 59 on Non-communicable diseases (this chapter is on Brightspace).

Non-communicable Diseases – Recommended Reading

Mabey, D., Gill, G., Parry, E., Weber, M. and Whitty, C. (2012) *Principles of medicine in Africa*. 4th edn. Cambridge: Cambridge University Press.

Please refer to Chapters 56, 57, 58, 59, 60, 61, 63 and 65.

Mental Health – Essential Reading

World Health Organisation (2010) *mhGAP Intervention Guide for mental, neurological and substance use disorders in non-specialized health settings*. Available at: https://www.who.int/mental_health/publications/mhGAP_intervention_guide/en/

Key reference for the mental health component of the DTM&H. Please download in advance of the sessions.

Maternal Health – Essential Reading

Antenatal care, Intrapartum care, Newborn care

World Health Organisation., UNICEF and UNPF (2017) *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. Available at:

http://www.who.int/maternal_child_adolescent/documents/managing-complications-pregnancy-childbirth/en/

Gynaecology including Family Planning

Van Beekhuizen, H. and Unkels, R. (2012) *A textbook of gynecology for less-resourced locations.*

Available at: https://www.glowm.com/resource_type/resource/textbook/title/a-textbook-of-gynecology-for-less-resourced-locations/resource_doc/35

Maternal Health – Recommended Reading

Global strategy

Every Woman Every Child (2015) *The Global Strategy for Women’s, Children’s and Adolescents’ Health (2016-2030)*. Available at:

http://globalstrategy.everywomaneverychild.org/pdf/EWEC_globalstrategyreport_200915_FINAL_WEB.pdf

World Health Organisation (2015) *Strategies toward ending preventable maternal mortality.*

Available at:

https://apps.who.int/iris/bitstream/handle/10665/153540/WHO_RHR_15.03_eng.pdf?sequence=1

Antenatal care, Intrapartum care, Newborn care

World Health Organisation (2018) *WHO recommendations: intrapartum care for a positive childbirth experience.* Available at:

<http://www.who.int/reproductivehealth/publications/intrapartum-care-guidelines/en/>

Family planning and STIs

World Health Organisation (2018) *Family planning: a global handbook for providers.* Available at:

<http://www.who.int/reproductivehealth/publications/fp-global-handbook/en/>

World Health Organisation (2007) *Training modules for the syndromic management of sexually transmitted infections.* Available at:

<http://www.who.int/reproductivehealth/publications/rtis/9789241593407/index/en/>

Child Health – Essential Reading

World Health Organisation (2013) *Pocket book of hospital care for children: guidelines for the management of common childhood illnesses.* Available at:

http://apps.who.int/iris/bitstream/10665/81170/1/9789241548373_eng.pdf?ua=1

This is the key reference for child health consistent with IMCI (Integrated Management of Childhood Illness) and will be referred to frequently in teaching on child health. It is highly recommended as a book to carry in your pocket. You can also purchase copies from the Library for £7 each.

Child Health – Further Reading

Southall D. (2014) *International maternal and child health: a practical manual for hospitals worldwide*. London: Radcliff Publishing.

A comprehensive and recent textbook covering most aspects of maternal and child health.

Countdown to 2030 (2017) *Tracking progress towards universal coverage for women's, children's and adolescents' health*. Available at: <http://countdown2030.org/reports-and-publications/countdown-2017-report>

The Countdown country profiles give a very useful overview of the status of maternal and child health and main services provided.

Global Nutrition Report website. Available at: <https://globalnutritionreport.org/>

World Health Organisation (2013) *Essential nutrition actions: improving maternal, newborn, infant and young child health and nutrition*. Available at: https://www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/

World Health Organisation (2013) *Updates on the management of severe acute malnutrition in infants and children*. Available at: https://www.who.int/nutrition/publications/guidelines/updates_management_SAM_infantandchildren/en/

UNICEF (Various) *The State of the World's Children Reports*. Available at: <https://www.unicef.org/sowc/>

Save the Children (Various) *Organisational reports: annual reports*. Available at: <https://www.savethechildren.org.uk/about-us/key-reports>

Lancet Global Health series:

Breastfeeding (2016) Available at: <http://www.thelancet.com/series/breastfeeding>

Stillbirths: ending preventable stillbirths (2016) Available at: <http://www.thelancet.com/series/ending-preventable-stillbirths>

Every Newborn (2014) Available at: <http://www.thelancet.com/series/everynewborn>

Maternal and Child Nutrition (2013) Available at: <http://www.thelancet.com/series/maternal-and-child-nutrition>

Childhood Pneumonia and Diarrhoea (2013) Available at: <https://www.thelancet.com/series/childhood-pneumonia-and-diarrhoea>

Adolescent Health (2012) Available at: <http://www.thelancet.com/series/adolescent-health-2012>

Early Child Development in Developing Countries (2011) Available at: <http://www.thelancet.com/series/child-development-in-developing-countries-2>

Hart, C. A., Broadhead, R. L. and Broadhead, R. L. (1992) *A colour atlas of paediatric infectious diseases*. London: Wolfe Pub.

Aimed at doctors, this is a picture-based teaching book giving brief, but helpful, descriptions of the conditions which many find an easy way of learning and revising. OUT OF PRINT but available in the

library.

Parasitology and Vector Biology – Essential Reading

A laboratory manual is provided to support practical sessions and complement lectures. Any additional reading is typically supplied with individual sessions or students are directed to supporting literature when appropriate during the programme.

Parasitology and Vector Biology – Recommended Reading

These texts are useful in broadening understanding of the topics of pathogens and vectors of disease. Students are not required to read all contents but instead may focus upon those areas related to DTM&H Programme sessions.

Service, M. W. (2012) *Medical entomology for students*. 5th edn. Cambridge: Cambridge University Press.

Perhaps the single most popular book with students regarding the subject of vectors of disease currently held on our library shelves. If you need an entomology text to complement course materials, this is the one we recommend. Out of print but available in library. Earlier editions are reliable as far as biology of the organisms is concerned but be aware that information on methods of control and insecticide resistance will not be up to date.

Despommier, D. D., Griffin, D. O., Gwadz, R. W., Hotez, P. J. and Knirsch, C. A. (2019) *Parasitic diseases*. 7th edn. New York: Parasites Without Borders.

An extremely popular medical parasitology text that provides a concise overview of the major (and some minor) parasites.

Free download of the above book via this link <http://www.parasiteswithoutborders.com/books>

Gockel-Blessing, E. A. (2013) *Clinical parasitology : a practical approach*. 2nd edn. St. Louis, Mo.: Elsevier Saunders.

A student-friendly and concise text that clearly highlights the major aspects of parasitology diagnostics and control.

Chiodini, P. L., Moody, A. H., Manser, D. W., Jeffrey, H. C., Jeffrey, H. C. and Moody, A. H. (2001) *Atlas of medical helminthology and protozoology*. 4th edn. New York: Churchill Livingstone.

User-friendly manual with very good images and lifecycle descriptions.

Peters, W. and Pasvol, G. (2007) *Atlas of tropical medicine and parasitology*. 6th edn. Edinburgh: Elsevier Mosby.

A collection of good quality photographs of parasites, vectors and clinical cases.

Cheesbrough, M. (2005) *District Laboratory Practice in Tropical Countries, Part 1. Tropical Health Technology*. Cambridge: Cambridge University Press.

A useful book for those with any element of laboratory work in the tropics.

Cheesbrough, M. (2006) *District Laboratory Practice in Tropical Countries, Part 2. District Laboratory Practice in Tropical Countries*. Cambridge: Cambridge University Press.

A useful book for those with any element of laboratory work in the tropics.

Public Health – Essential Reading

No single absolutely essential text, but you are encouraged to read as directed by course material and your interests, to develop your understanding of international public health.

Public Health – Recommended Reading

For a reference text book, we suggest you start with:

Merson, M. H., Black, R. E. and Mills, A. J. (2019) *Global health: diseases, programs, systems, and policies*. 4th edn. Burlington, MA: Jones & Bartlett Learning.

Or

Birn, A.-E., Pillay, Y., Holtz, T. H., Basch, P. F. and Holz, T. H. (2009) *Textbook of international health: global health in a dynamic world*. 3rd edn. New York: Oxford University Press.

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Free download of the above book via this link:

https://apps.who.int/iris/bitstream/handle/10665/43541/9241547073_eng.pdf;jsessionid=6A9BC24EDA1B85E471E7D41CB4CC0F29?sequence=1

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Hennekens, C. H., Buring, J. E. and Mayrent, S. L. (1987) *Epidemiology in medicine*. Boston: Little, Brown.

Slightly dated but sound text on study design and issues of bias and confounding.

El Feki, S. (2004) 'The birth of reproductive health: a difficult delivery', *Plos Medicine*, 1(1), pp. e9-e9.

Lucas, A. O., Gilles, H. M., Lucas, A. O. and Gilles, H. M. J. (2003) *Short textbook of public health medicine for the tropics*. 4th edn. New York, NY : Oxford University Press.

Heymann, D. L. (2015) *Control of communicable diseases manual: an official report of the American Public Health Association*. 20th edn. Washington, DC: APHA Press.

Useful quick reference for infectious diseases including distribution, transmission, incubation periods.

Hanquet, G., Lines, T. and Marschiner, A. (1997) *Refugee health: an approach to emergency situations*. London: Macmillan.

Free download of the above book via this link:

http://refbooks.msf.org/msf_docs/en/refugee_health/rh.pdf

Essential reading for those managing humanitarian emergencies, sound on methods and priorities in complex emergencies, though not updated since 1997. Excellent value.

ICRC (1996) **War and public health: a handbook**. Available at:

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This is the handbook used by ICRC to accompany their Health Emergencies in Large Populations course. Clearly and concisely covers a wide range of important topics including planning, food and nutrition, water and environmental health, communicable diseases, medical and surgical care, epidemiology, health-care systems, disasters and development, protecting victims of armed conflicts, and humanitarian ethics.

Valadez, J. J. (1991) *Assessing child survival programs in developing countries: testing lot quality assurance sampling. Harvard series on population and international health*: Boston, Mass: Harvard University Press.

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Both of the above texts are useful resources for learning to conduct a community based health survey.

Henderson, R. H. and Sundaresan, T. (1982). 'Cluster sampling to assess immunization coverage: a review of experience with a simplified sampling method', *Bulletin of the World Health Organization*, 60 (2), pp. 253 - 260.

Robertson, S. E. and Valadez, J. J. (2006) 'Global review of health care surveys using lot quality assurance sampling (LQAS), 1984-2004', *Social Science & Medicine*, 63, pp. 1648-1660.

Cairncross, S. and Feachem, R.G. (2018) *Environmental health engineering in the tropics: an introductory text*. 3rd edn. London: Routledge.

Public Health – Online Resources

There is plenty of useful information out there, including downloadable manuals and other texts, including the following:

Societies

The Royal Society of Tropical Medicine and Hygiene

<https://rstmh.org/>

American Society for Tropical Medicine & Hygiene

<http://www.astmh.org>

American Society for Microbiology

<http://www.asm.org/>

European Society of Clinical Microbiology and Infectious Diseases

<http://www.escmid.org/>

CORE Group: Membership organization of International NGOs

<http://www.coregroup.org/>

RCPCH International Child Health Group

<http://www.internationalchildhealthgroup.org/>

International partnerships and initiatives

The Partnership for Maternal Newborn and Child Health

<http://www.who.int/pmnch/about/en/>

Healthy Newborn Network

<http://www.healthynewbornnetwork.org/>

Countdown to 2030; Maternal Newborn and Child Survival

<http://countdown2030.org/>

Tropical Medicine

CDC Emerging Infectious Disease

<http://www.cdc.gov/ncidod/EID/>

WHO Tropical Diseases

<http://www.who.int/tdr>

Medscape Infectious Diseases

<http://id.medscape.com>

Infectious Diseases Society of America

<http://www.idsociety.org/>

Paediatric Infectious Diseases

<http://www.pids.org/>

Infectious Diseases resources (Australia)

<http://www.health.vic.gov.au/ideas/>

Welcome to Eurosurveillance Weekly

<https://www.eurosurveillance.org/>

International Society for Infectious Diseases ProMED Email

<http://www.promedmail.org/>

Johns Hopkins Antibiotic and HIV Guides

<http://www.hopkins-abxguide.org/>

Harvard TH Chan School of Public Health

<https://www.hsph.harvard.edu/news/press-releases/>

A useful website that covers many public health topics. You can sign up to get a weekly newsletter with all the latest research.

HIV (online support for HIV care from the Tropical Institute in Antwerp)

<https://www.itg.be/E/hiv>

On-line clinical cases from the Gorgas Course, Peru 2017:

<https://www.uab.edu/medicine/gorgas/cases-blog>

Previous years' clinical cases can be searching on "Gorgas cases"

Ultrasound Guide for Emergency Physicians

<https://www.acep.org/sonoguide/introduction.html>

Brain Infections Global 'NeuroID eLearning' course hosted on the Global Health Training Centre.

Four modules have currently been released, with more to follow at a later date. Neurological infectious diseases pose some of the greatest challenges to clinicians and these modules are here to help! To begin the NeuroID eLearning course [click here](#)

Parasitology

CDC Parasitic Diseases

<http://www.dpd.cdc.gov/dpdx/>

Parasitic Diseases – Monthly Case Studies

<https://www.cdc.gov/dpdx/monthlycasestudies/2019/index.html>

NGOs and Humanitarian Health

MSF Publications on line: General / Refugee Health

<http://www.refbooks.msf.org/>

Health Library for Disasters

<http://helid.desastres.net/>

Sphere Handbook

<https://www.spherestandards.org/>

The Medical Peace Work textbook

<http://www.medicalpeacework.org/home.html>

CORE Group Technical Working Group Resources for Child Health; Community centered Health Systems Strengthening; Monitoring and Evaluation; Nutrition; Reproductive, Maternal, Newborn, and Adolescent Health; Social and Behavior Change

<http://coregroup.org/our-work/working-groups/>

UNICEF/LSTM's LQAS Generic Toolkit

<http://www.lstmed.ac.uk/the-lqas-generic-toolkit>

LSTM's training videos for community surveys

<http://www.lstmed.ac.uk/lqas-films>

Travel Links

Centre for Disease Control: Travel Health advice from the USA

<http://www.cdc.gov/travel/>

Weekly Epidemiological Record From World Health Organisation

<http://www.who.ch/wer/>

World Health Organisation 'Outbreaks'

http://www.who.int/emc/outbreak_news/index.html (Regularly updated notes by WHO)

WHO (Yellow Book) International Travel and Health

<http://www.who.int/ith/>

Other Links

Babelfish translation site

<http://www.babelfish.com>

CHIFA - Child Health and Rights

<http://www.hifa.org/forums/chifa-child-health-and-rights>

Addresses the information and learning needs of those responsible for the care of children in developing countries, including mothers, fathers and family caregivers as well as health workers, researchers and policymakers

Appendix 1: Learning outcomes for themes

This section provides learning outcomes for the four themes of the course (clinical tropical medicine including maternal, newborn and child health; parasitology; vector biology; public health). Individual sessions will have their own learning outcomes to help guide you during the session.

Clinical Tropical Medicine including Maternal, Newborn and Child Health

By the end of the programme, you will be able to:

- Demonstrate an in-depth knowledge and insight of the epidemiology, pathogenesis, clinical presentation, complications, differential diagnosis, investigation and management of important diseases*
- Review challenges in clinical management and how these can be addressed despite limited resources
- Critically appraise global strategies that aim to improve maternal, newborn and child health
- Recommend disease prevention in healthy travellers including travellers with special needs and identify and manage illness in the returned traveller
- Consider ethical issues related to providing health care in low resource settings

*The following diseases are important based on their contribution to the burden of disease:

Parasitic infections: Malaria, African trypanosomiasis, American trypanosomiasis, leishmaniasis, schistosomiasis, other flukes, lymphatic filariasis, onchocerciasis, loiasis, gut protozoa, soil transmitted helminths, cestodes, parasites of importance in the immunocompromised host

Communicable Diseases: TB, HIV, sexually transmitted infection, acute respiratory infection, diarrhoea, cholera, dysentery, typhoid, arboviruses, viral haemorrhagic fevers, rabies, hepatitis, typhus, relapsing fever, plague, anthrax, tetanus, meningitis, melioidosis, brucellosis, spirochaetoses, leprosy, deep mycoses, zoonoses.

Non-communicable diseases: Venomous bites and stings, haematological problems, asthma, cardiovascular disease, diabetes, mental health problems, skin disease, eye disease, reproductive health, gynaecological problems, emergency obstetrics, newborn health.

We will also cover major contemporary disease outbreaks, anaesthetics and surgery in low resource settings.

Parasitology and Vector Biology

Learning in parasitology and vector biology concerns the infectious agents that result in the greatest burden of diseases in tropical and low-resource settings and their insect vectors.

Parasitology

Upon successful completion of the course, you will be able to:

- Outline life histories of parasites relevant to disease transmission, prevention and control
- Explain parasite epidemiology and the relationship between human behavior and transmission
- Relate parasite development in the human to clinical signs and pathology, and the interaction with immune and genetic host factors
- Analyse advantages and disadvantages of different parasite diagnostic strategies
- Diagnose a range of parasites microscopically and the relevance to patient management
- Review the public health significance including the potential interactions between infection with specific parasites and other agents of disease
- Discuss current approaches to the control, elimination and eradication of selected parasites
- Appraise key current research developments that may help understand the epidemiology and novel control strategies

Parasites used in the teaching will primarily be malaria, gastrointestinal protozoa, Leishmania, trypanosomes, schistosomiasis, soil transmitted helminths, cestodes and filarial parasites.

Vector Biology

Upon successful completion of the course, for the major vector-borne infections, you will be able to:

- Evaluate their geographic distribution, epidemiology and relative public health importance and whether a vector is likely to be present in a particular locality
- Analyse parameters of vector biology that influence disease epidemiology and transmission, including host preference, time and location of biting, resting and flight behaviour, breeding site preferences, survival, population density
- Identify distinguishing features of important vector groups including mosquitoes,¹ sandflies, blackflies, tsetse flies, ticks, lice, fleas, mites, bugs, houseflies and other flies
- Explain how knowledge of insect life-cycles is employed in disease prevention and control
- Discuss how human behaviour and development activities may increase or diminish the risk of vector breeding and disease transmission
- Explain important methods of vector control including their primary purpose and relative advantages and limitations for different diseases²
- Contrast the importance of vector control with the use other control methods such as chemoprophylaxis, chemotherapy and vaccination

1. In mosquitoes

- a. recognise the different life cycle stages: eggs, larvae, pupae, adults
- b. identify the adult females of *Anopheles*, *Aedes*, *Culex* and *Mansonia*
- c. distinguish the larvae of anophelines from culicines
- d. recognise the larvae of *Mansonia*

2. This includes insecticide treated bed nets (ITNs) or long-lasting insecticidal nets (LLINs); indoor residual spraying (IRS); larviciding; the major insecticide groups and the challenge of insecticide resistance; environmental modification; biological control and its limitations; integrated vector management.

Public Health

The learning will help you to critically appraise health, influences on health, health service delivery and public health approaches to improve health in low resource settings.

By the end of the programme, you will be able to:

- Critically review the history of public health and its impact on the development and delivery of services to improve health
- Synthesise information from a wide range of sources and critically appraise research evidence in order to influence service design and delivery; making them more efficient, effective and responsive to health need
- Critically review the non-clinical determinants of health, including social, political, economic, environmental and gender disparities
- Critically review global health policy and the role of various organisations involved in global health governance
- Explore your leadership role in the monitoring and evaluation of health services and in the reorientation of services so that they better protect and improve health, including in a disease outbreak situation in a low income setting
- Adopt a leadership role in monitoring, evaluation, and reshaping health services so that they better protect and improve health, including in disease outbreaks

Appendix 2: DTM&H Board of Studies membership and Terms of Reference

Membership:

Co-Directors of Studies (joint Chairs)
Child Health teaching Lead
TB Short Course Lead
HIV Short Course Lead
Critical Appraisal teaching Lead
Parasitology teaching Lead
Public Health teaching Lead
Maternal and Newborn Health teaching Lead
Vector Biology teaching Lead
Practical teaching Lead
Student Representatives

In Attendance:

Dean of Education
Academic Registrar (Deputy for Dean of Education)
Quality Assurance Unit Representative
Technology Enhanced Learning Unit Representative
Student Experience Officer
Programme Administrator (Secretary)

Terms of Reference:

Programme Management:

To oversee the operation and management of the Diploma in Tropical Medicine, including consideration of issues relating to the delivery, staffing and administrative support.

Monitoring and Review:

- To monitor and evaluate the programme including student performance and feedback from students, staff, graduates, sponsors, employers and professional bodies, as appropriate.
- To receive reports from External Examiners and agree any actions to be taken.
- To assist the Directors of Studies in preparing the Annual Programme Review and updating the Programme Specification on an annual basis.
- To highlight to the Programmes Board any resource issues that have a direct impact on the programme.

Learning, Teaching and Assessment:

- To ensure that the curriculum remains current and reflects the expectations of students, employers, professional bodies and other stakeholders.
- To ensure that the approaches used to assess the programme are robust and fit for purpose.
- To promote continuing discussion of effective means of Learning and Teaching and of mechanisms for enhancing Learning and Teaching.

Student Matters:

- To discuss matters concerning individual applicants or students and decide on any action to be taken (under reserved business)

Communication with other Committees:

- To liaise with other Boards of Studies where necessary to ensure the discharge of their respective duties.
- To carry out such other functions as may from time to time be requested by the Programmes Board, Quality Management Committee or L&T Committee.

Appendix 3: Marking Guidelines for DTM&H Written Papers

%	COMMENTS
90-100	Distinction Absolutely outstanding answer. Factually flawless; strong degree of originality and critical insight; clearly organised; comprehensive coverage; extensive evidence of supplementary reading; style and presentation excellent.
80-89	Distinction Outstanding answer. Factually flawless; clearly organised; logical; good evidence of supplementary reading; originality and critical insight present; style and presentation excellent.
70-79	Distinction Very good answer. Factually flawless; some originality of thought and critical insight; evidence of outside reading; good coverage; style, presentation and organisation very good.
60-69	Merit Comprehensive answer. Clear; logical; thorough; factually sound with no serious errors; evidence of outside reading and/or originality and critical insight; style, presentation and organisation good.
50-59	Pass Adequate answer. Accurate but limited to lecture material; perhaps some errors or key facts missing; no originality; little evidence of outside reading; style, presentation and organisation moderate.
40-49	Fail Incomplete answer. Information fairly sparse; some inaccuracies; answer broadly relevant to question but poor coverage of lecture material; no sign of outside reading; style, presentation and organisation poor.
30-39	Fail Deficient answer. Poorly directed at question; many omissions or errors but some relevant facts correct; understanding poor; style, presentation and organisation poor.
15-29	Fail Very deficient answer. Answer largely irrelevant to the question; a few facts correct but many omissions and errors; style, presentation, grammar and organisation very poor.
0-14	Fail Totally inadequate answer. Little relevance to question or little factual material; wrong approach; style, presentation, grammar and organisation extremely poor.

Appendix 4: Diagnostic Parasitology Practical Examination

Below is an example of how we would like you to present your findings

Examination No.	Write your examination number in this space:
-----------------	--

Patient History

The patient is an Italian who has recently returned from Ethiopia where he was working as a teacher in a rural area. He visited his general practitioner because he was suffering from fever and headache. He informed his doctor that he had not taken any prophylaxis for malaria. He was febrile, T 38.4 °C, but there were no other abnormal physical findings. Routine blood smears were made and a stool specimen collected.

1. Examine the thin blood film

Report your findings below and state your conclusion in the space provided:
(N.B. Each finding must be checked by a member of the staff.)

	For official use only	
DESCRIPTION: <i>(Below are examples of findings you might report. The more different features you report, the better)</i>	Code	Initials
Infected red blood cell enlarged, edge not frayed		
Schüffner's dots present		
Early ring (trophozoite) form present in RBC		
Developing schizont with dividing nucleus (chromatin) and undivided cytoplasm		
Late trophozoite (irregular/amoeboid appearance), large single nucleus (red) and irregular cytoplasm (blue) present in RBC		
CONCLUSION: <i>Plasmodium vivax</i>		

Examine the stool specimen. What parasite/s are present in the stool?

Report your findings below:

For official use only

DESCRIPTION (report all your relevant findings)	CONCLUSION	Code	Initials
1. Oval cyst 6 x 12 μ m with curved central rod/line (axostyle)	<i>Giardia duodenalis</i>		
2 Round cyst 12 μ m, 4 nuclei present	<i>Entamoeba histolytica/dispar</i>		
3 Brownish oval egg 50 x 25 μ m with clear (mucoid) plug at each end	<i>Trichuris trichiura</i>		
4 Round cyst 12 μ m, 2 nuclei with peripheral chromatin, glycogen mass	Immature cyst of <i>E. histolytica/dispar</i>		
5			
6			
7			
8			
9			
10			

2. How would you manage this patient?

Here you would give as full information as possible (bearing in mind the time constraints) on your management, including basic approach to the patients, supportive and specific treatment and prevention.