**CENTRAL UNIVERSITY OF KERALA**
**DEPARTMENT OF PUBLIC HEALTH AND COMMUNITY MEDICINE**

**Minutes of the Board of Studies meeting held on July 8, 2020**

**1.** The 2nd board of studies meeting for the Department of Public Health and Community Medicine was held on July 8th 2020 from 10 am to 1pm. The meeting was attended by the following members**.**

| Sl. | Name of the expert | Capacity | Designation & Affiliation |
|---|---|---|---|
| 1 | Dr Elezebeth Mathews | Chairperson | HOD (In-charge), DPH&CM, CUK |
| 2 | Prof. (Dr.) KR Thankappan | Member | Professor, DPH&CM, CUK |
| 3 | Assoc. Prof. Dr. Rajendra Pilankatta | Member | Dean, School of Medicine & Public Health, CUK |
| 4. | Dr Sibasis Hense | Member | Asst. Professor, DPH&CM, CUK |
| 5 | Prof. (Dr.) Raman Kutty V | Member | Epidemiologist and Data Science Consultant, Amala Institute of Medical Sciences, Thrissur, Kerala |
| 6 | Prof. (Dr.) Unnikrishnan B | Member | Associate Dean and Professor Department of Community Medicine, Kasturba Medical College, Mangalore MAHE. |

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| 7 | Dr. Shailendra Kumar B Hegde | Member | Senior Vice President - Public Health Innovations at Piramal Swasthya, Hydearabad (India) |
| 8. | Dr. C.K. Jagadeesan | Member | State Nodal Officer of ARDRAM Mission and Deputy Director, Directorate of Health Services, Govt. of Kerala |
| 9. | Dr. K Vijayakumar | Member | Professor, Dept. of Community Medicine, Amrita Institute of Medical Sciences, Kochi. |
| 10. | Mr. Prakash Babu Kodali | Faculty member | Department of Public Health and Community Medicine, Central University of Kerala |
| 11 | Ms. Jayalakshmi Rajeev | Faculty Member | Department of Public Health and Community Medicine, Central University of Kerala |

2. The Department proposed for a change in the eligibility criteria for admission to the MPH program due to the increasing number of applications from life sciences and biomedical stream. Faculty members envisioned that if there are more applications with relaxed eligibility criteria, the competition to the program will be tougher and best students can be selected to the program.

**Current Eligibility criteria**: MBBS/BDS/B.Sc. Nursing (4 years)/any Branch of Engineering (4 years)/ B.Pharma/Bachelor of Phototherapy/ B. AYUSH/ B.Vety/B.V.Sc./ Master in Social Work/ Economics/ Policy Science/ Sociology/Nutrition/ Development Economics/ Public Administration/Psychology/ Law. No upper age limits.
**Proposed eligibility criteria**: Bachelor's degree in the following disciplines are eligible: Medicine / AYUSH / Dentistry / Veterinary Sciences/ Nursing/ Allied Health Sciences / Life Sciences / Statistics / Biostatistics / Demography / Population Studies / Nutrition / Sociology /

Psychology / Anthropology / Social Work/ Engineering/ Bio-medical sciences/ Law/ Management Studies/ Public Policy & Administration/ Economics. No upper age limits.

The members of the Board of Studies deliberated on the eligibility criteria proposed by the department and approved the same.

**3.** The MPH curriculum was revised as per the curriculum promulgated by the Ministry of Health and Family Welfare, adhering to the CBCS guidelines of University Grants Commission. The revised curriculum has also incorporated value addition courses from Massive Open Online Courses from SWAYAM program of Government of India as electives.

   The revised MPH programme consists of 72 Credits, of which 59 and 13 credits are offered through core and elective courses (including MOOC courses) respectively. **Semester- I** consist of 20 credits; **Semester- II** consist of 20 Credits; **Semester-III** consist of 18 Credits; and **Semester -IV** consist of 14 credits.

   The revised program structure was approved by the members.

4. Dr. Vijayakumar recommended that disaster management be included in Principles of Practices of Public Health course and the same has been incorporated.
5. Dr. Jagadeesan suggested the need to include health systems based internship to students to get them acquainted with the functioning of the health system. He further suggested that the course on Health Promotion methods and approaches shall also include the approaches in decentralized system. The same has been incorporated.
6. The courses and the syllabi was reviewed and approved by the members.

## Semester: II
## Core Course

## 8. Course Code & Title: MPC 52 03 & Epidemiology of Communicable & Non-Communicable Diseases
## Credits: 4

**Course objectives:** The objective of this course is to make students understand the major non-communicable diseases, their risk factors, strategies for prevention, risk factor surveillance as per the World Health Organization STEPS protocol, case studies on major interventions to reduce risk factors in India and a few other developing countries and the national program for prevention and control of Cancer, Cardiovascular diseases, Diabetes and Stroke in India.

**Course outcomes:** On successful completion of this course, students will be able to:

1) Understand the key concepts pertaining to communicable/infectious diseases, their transmission mechanisms, communicable disease surveillance and infectious disease outbreak response systems.
2) Develop conceptual understanding of epidemiology of communicable and non-communicable diseases.
3) Conduct outbreak investigation and suggest infectious disease containment strategies
4) Identify etiology and risk factors and develop strategies to prevent and control communicable and non-communicable diseases.
5) Apply multi-disciplinary methods (such as mathematical modelling, digital health technologies etc.,) in addressing the challenges of communicable and non-communicable diseases.

This is an employment focussed skill development course. On successful completion of the course the students shall develop skills in Non-communicable disease surveillance, out-break investigation of infectious diseases, communicable and non-communicable disease prevention and manifest understanding of vaccine development process.

**Teaching methods:** This course will be delivered using a variety of methods and modalities such as interactive classroom and online lectures, self-study, case studies, written assignment, class room exercises using computers, quiz, field visit, group work, field survey, class room presentations in groups etc.

| Units and Topics | Teaching Methods | Mandatory Readings |
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| **Unit-I: Non-Communicable Diseases** | | |

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| Objectives of the course | X | | | | | | | | |
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| Epidemiological Transition | X | | | | | X | | | Omran., A, R. The epidemiologic transition: a theory of the epidemiology of population change. 1971. *Milbank Q*. 2005;83(4):731-757. |
| NCD Risk factor Surveillance | X | | | | | X | | | Riley, L., Guthold, R., Cowan, M., Savin, S., Bhatti, L., Armstrong, T., & Bonita, R. (2016). The World Health Organization STEP-WISE Approach to Noncommunicable Disease Risk-Factor Surveillance: Methods, Challenges, and Opportunities. *American Journal of Public Health*, *106*(1), 74–78. https://doi.org/10.2105/AJPH.2015.302962 |
| NCD Risk factor Surveillance STEP 1 | X | | | | | X | | X | Sarma, P. S., Sadanandan, R., & Thulaseedharan , J. V. et al (2019). Prevalence of Risk Factors of Non-Communicable Diseases in Kerala, India: Results of a Cross-Sectional Study. *BMJ Open*, *9*(11), e027880. https://doi.org/10.1136/bmjopen-2018-027880 |
| NCD Risk factor Surveillance STEP 2 and 3 | X | | | | | X | | X | |
| Risk factor Modification | X | | | | | X | | | Puska, P., Laatikainen, T., Korpelainen, V., & Vartiainen, E. (2016). Contribution of the North Karelia Project to International Work in CVD and NCD Prevention and Health Promotion. *Global Heart*, *11*(2), 243–246. https://doi.org/10.1016/j.gheart.2016.04.009 |
| Strategies of Prevention. | X | | | | | X | | | Rose, G. (2001). Sick Individuals and sick populations. *International Journal of Epidemiology*, *30*(3), 427–432. https://doi.org/10.1093/ije/30.3.427 |
| Risk factors of NCDs: Tobacco, overall | X | | | | | X | | | WHO Tobacco: fact sheet. Geneva: World Health Organization, 2018. https://www.who.int/en/news-room/fact-sheets/detail/tobacco |
| Risk factors of NCDs: Tobacco, FCTC | X | | | | | X | | | Mohan, S., Mini, G. K., & Thankappan, K. R. (2013). High Knowledge of Framework Convention on Tobacco Control Provisions Among Local Government Representatives Does Not Translate into Effective Implementation: Findings from Kerala, India. *Public Health*, *127*(2), 178. https://doi.org/10.1016/j.puhe.2012.11.018 |
| Risk factors of NCDs: Physical inactivity & Public Health | X | | | | | X | | | Mathews, E., Pratt, M., Jissa, V. T., & Thankappan, K. R. (2015). Self-reported Physical Activity and Its Correlates Among Adult Women in the |

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| | | | | | | | | | Expanded Part of Thiruvananthapuram City, India. *Indian Journal of Public Health*, *59*(2), 136–140. https://doi.org/10.4103/0019-557X.157535 |
| Risk factors of NCDs: Physical inactivity, methodology for measurements | **X** | | | | | **X** | | | Mathews, E., Salvo, D., Sarma, P., Thankappan, K., & Pratt, M. (2016). Adapting and Validating the Global Physical Activity Questionnaire (GPAQ) for Trivandrum, India, 2013. *Preventing Chronic Diseases*, *13*, E53. https://doi.org/10.5888/pcd13.150528. |
| Risk factors of NCDs: Unhealthy Diet | **X** | | | | | **X** | | | GBD 2017 Diet Collaborators. (2019). Health Effects of Dietary Risks in 195 Countries, 1990-2017: A Systematic Analysis for the Global Burden of Disease Study 2017. *Lancet*, *393*(10184), 1958. https://doi.org/10.1016/S0140-6736(19)30041-8 |
| Risk Factors of NCDs: Alcohol use | **X** | | | | | **X** | | | GBD 2016 Alcohol Collaborators. (2018). Alcohol Use and Burden for 195 Countries and Territories, 1990-2016: A Systematic Analysis for the Global Burden of Disease Study 2016. *Lancet*, *392*(10152), 1015. https://doi.org/10.1016/S0140-6736(18)31310-2 |
| Case studies on interventions for NCD risk reduction<br>1. Quit Tobacco International | **X** | | | | | **X** | | | Yamini , T. R., Nichter, M., Nichter, M. et al. (2015). Developing a Fully Integrated Tobacco Curriculum in Medical Colleges in India. *BMC Medical Education*, *15*, 15. https://doi.org/10.1186/s12909-015-0369-3. |
| Case Study 2. Dietary intervention | **X** | | | | | **X** | | | Daivadanam, M., Wahlstrom, R., Ravindran , T. K. S., Sarma, P. S., Sivasankaran, S., & Thankappan, K. R. (2018). Changing Household Dietary Behaviours Through Community-Based Networks: A Pragmatic Cluster Randomized Controlled Trial in Rural Kerala, India. *PloS One*, *13*(8), e0201877. https://doi.org/10.1371/journal.pone.0201877 |
| Case Study 3. Kerala Diabetes Prevention Program | **X** | | | | | **X** | | | Thankappan, K. R., Sathish, T., & Tapp, R. J. (2018). A Peer-Support Lifestyle Intervention for Preventing Type 2 Diabetes in India: A Cluster-Randomized Controlled Trial of the Kerala Diabetes Prevention Program. *PLOS Medicine*, *15*(6), e1002575. https://doi.org/10.1371/journal.pmed.1002575 |
| Case study 4. Community Interventions for Health | **X** | | | | | **X** | | | Dyson, P. A., Anthony, D., Fenton, B. et al. (2015). Successful Up-Scaled Population Interventions to Reduce Risk Factors for Non-Communicable Disease in Adults: Results From the International Community Interventions for Health (CIH) Project in China, India and Mexico . *PloS One* , *10*(4), e0120941. https://doi.org/10.1371/journal.pone.0120941 |

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| National program for the prevention and control of Cancer, cardiovascular diseases, diabetes and stroke | X | | | | X | X | X | | Krishnan, A., Gupta, V., Ritvik, Nongkynrih, B., & Thakur, J. S. (2011). How to Effectively Monitor and Evaluate NCD Programmes in India . *Indian Journal of Community Medicine* , *36*, S57-62. |
| **Unit-II: Communicable Diseases** | | | | | | | | | |
| 2.1. Introduction to Infectious Disease Epidemiology (IDE)<br>- Principles of IDE<br>- Key Terminologies used in IDE<br>- Burden of Infectious Diseases<br>- Transmission of infectious diseases<br>- Classification of infectious diseases<br>- Notifiable diseases | X | | | X | X | | X | X | Nelson, K. E., & Williams, C. M. (Eds.). (2014). Infectious disease epidemiology: theory and practice. Jones & Bartlett Publishers.<br>Stein, R. A. (2011). Super-spreaders in infectious diseases. *International Journal of Infectious Diseases*, *15*(8), e510-e513.Available at https://www.sciencedirect.com/science/article/pii/S1201971211000245 |
| 2.2. Prevention and management of Infectious diseases<br>- Immunity (Active immunity, passive immunity, heard immunity)<br>- Vaccine development and deployment (phases of vaccine development, vaccine efficacy and effectiveness, vaccination strategies, critical vaccination coverage) | X | | | | X | | X | | Altmann, D. M., Douek, D. C., & Boyton, R. J. (2020). What policy makers need to know about COVID-19 protective immunity. *The Lancet*, *395*(10236), 1527-1529.available at https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30985-5/fulltext<br>Randolph, H. E., & Barreiro, L. B. (2020). Herd Immunity: Understanding COVID-19. *Immunity*, *52*(5), 737-741. Available at https://www.sciencedirect.com/science/article/pii/S1074761320301709<br>Doherty, M., Buchy, P., Standaert, B., Giaquinto, C., & Prado-Cohrs, D. (2016). Vaccine impact: benefits for human health. *Vaccine*, *34*(52), 6707-6714. Available at https://www.sciencedirect.com/science/article/pii/S0264410X16309434<br>Anderson, R. M., & May, R. M. (1985). Vaccination and herd immunity to infectious diseases. *Nature*, *318*(6044), 323-329. Available at https://www.nature.com/articles/318323a0.pdf<br>Leroux-Roels, G., Bonanni, P., Tantawichien, T., & Zepp, F. (2011). Vaccine development. *Perspectives in Vaccinology*, *1*(1), 115-150. Available at https://www.researchgate.net/profile/Terapong_Tantawichien/publication/257740127_Vaccine_development/links/00b7d53a6f1e3c5748000000.pdf |

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| 2.3. Infectious disease outbreaks<br>- Types of infectious disease outbreak<br>- Outbreak investigation | **X** | | | **X** | | **X** | | | Arunkumar, G., Chandni, R., Mourya, D. T., Singh, S. K., Sadanandan, R., Sudan, P., & Bhargava, B. (2019). Outbreak investigation of Nipah virus disease in Kerala, India, 2018. *The Journal of infectious diseases*, *219*(12), 1867-1878. Available at https://academic.oup.com/jid/article/219/12/1867/5144922 |
| 2.4 Infectious disease surveillance | **X** | | | **X** | | | **X** | | Thurmond, M. C. (2003). Conceptual foundations for infectious disease surveillance. Journal of veterinary diagnostic investigation, 15(6), 501-514.<br>Hashimoto, S., Murakami, Y., Taniguchi, K., & Nagai, M. (2000). Detection of epidemics in their early stage through infectious disease surveillance. International journal of epidemiology, 29(5), 905-910.<br><br>Gianicolo, E., Riccetti, N., Blettner, M., & Karch, A. (2020). Epidemiological Measures in the Context of the COVID-19 Pandemic. Deutsches Ärzteblatt International, 117(19), 336. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7207201/ |
| 2.5 Mathematical modelling of infectious diseases<br>- Basic reproductive number ($R_0$)<br>- Types of mathematical models used for modelling infectious diseases<br>- SIR, SEIR and SEIRS models<br>- Dynamics in SIR models (influence of birth, death and migration) | **X** | | | | | **X** | | **X** | Heffernan, J. M., Smith, R. J., & Wahl, L. M. (2005). Perspectives on the basic reproductive ratio. *Journal of the Royal Society Interface*, *2*(4), 281-293. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1578275/<br><br>Shrestha, S., & Lloyd-Smith, J. O. (2010). Introduction to mathematical modeling of infectious diseases. *Modeling Paradigms and Analysis of Disease Transmission Models*, *75*, 1. Available at http://www.academia.edu/download/38600599/Shrestha2010.pdf |
| 2.6 Climate change and social determinants as risk factors for infectious diseases | **X** | | | **X** | | **X** | | | Patz, J. A., Githeko, A. K., McCarty, J. P., Hussein, S., Confalonieri, U., & De Wet, N. (2003). Climate change and infectious diseases. Climate change and human health: risks and responses, 2, 103-32. Available at http://www.debok.net/pdf/9191819274.pdf<br><br>Semenza, J. C., Suk, J. E., & Tsolova, S. (2010). Social determinants of infectious diseases: a public health priority. *Eurosurveillance*, *15*(27), 19608. |

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| | | | | | | | | | Bishwajit, G., Ide, S., & Ghosh, S. (2014). Social determinants of infectious diseases in South Asia. *International scholarly research notices*, *2014*. https://downloads.hindawi.com/archive/2014/135243.pdf |
| 2.7 Emerging and reemerging infectious diseases | **X** | | | **X** | | **X** | | | Morens, D. M., Folkers, G. K., & Fauci, A. S. (2004). The challenge of emerging and re-emerging infectious diseases. Nature, 430(6996), 242-249. Available at https://www.nature.com/articles/nature02759 |
| 2.8 Laws and regulations concerning communicable diseases | **X** | | | **X** | | **X** | | | Fidler, D. P. (1996). Globalization, international law, and emerging infectious diseases. Emerging infectious diseases, 2(2), 77. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2639823/pdf/8903206.pdf<br>Aginam, O. (2002). International law and communicable diseases. *Bulletin of the World Health Organization*, *80*, 946-951. Available at https://www.scielosp.org/article/bwho/2002.v80n12/946-951/pt/<br><br>Bahurupi, Y., Mehta, A., Singh, M., Aggarwal, P., & Kishore, S. (2020). Epidemic diseases act 1897 to public health bill 2017: Addressing the epidemic challenges. *Indian Journal of Public Health*, *64*(6), 253-255.<br><br>Draft PHPCM of Epidemics, Bio-Terrorism and Disasters Bill (2017). Available from: https://www.prsindia.org/uploads/media/draft/Draft%20PHPCM%20of%20Epidemics,%20Bio-Terrorism%20and%20Disasters%20Bill,%202017.pdf |
| 2.9 Digital health technologies in Infectious disease prevention and control. | **X** | | | **X** | | **X** | | | Hay, S. I., George, D. B., Moyes, C. L., & Brownstein, J. S. (2013). Big data opportunities for global infectious disease surveillance. PLoS med, 10(4).<br><br>Robertson, C., Sawford, K., Daniel, S. L., Nelson, T. A., & Stephen, C. (2010). Mobile phone–based infectious disease surveillance system, Sri Lanka. Emerging infectious diseases, 16(10), 1524.<br><br>Choi, J., Cho, Y., Shim, E., & Woo, H. (2016). Web-based infectious disease surveillance systems and public health perspectives: a systematic review. *BMC public health*, *16*(1), 1238. |

L- Lecture; FW- Field work; FV - Field Visit; CS - Case study; GW- Group work; SS- Self-study; SP- Seminar presentation; P-Practical

**Evaluation**

As per CBCS guidelines, this course will be evaluated for 100 marks with a Continuous Evaluation (CA) component of 40 marks and End-Semester Evaluation (ESA) component of 60 marks.

**Additional readings**

Nelson, K. E., & Williams, C. M. (Eds.). (2014). Infectious disease epidemiology: theory and practice. Jones & Bartlett Publishers.