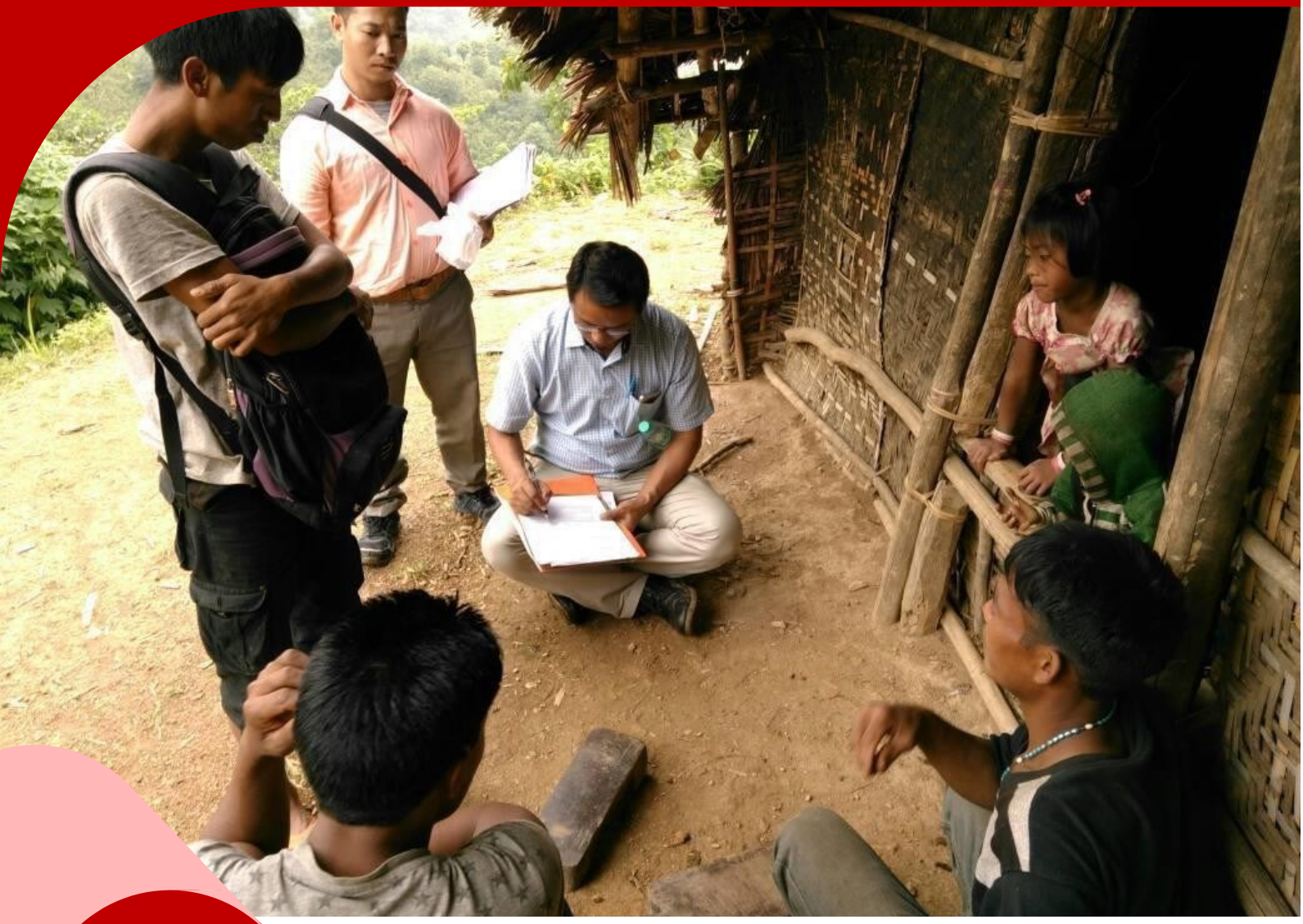
सत्यमेव जयते

Brochure

India Epidemic Intelligence Service (EIS) Programme



National Centre for Disease Control, Delhi

and

H.N.B. Uttarakhand Medical Education University, Dehradun

in collaboration with

US Centers for Disease Control and Prevention, Atlanta

Contents

Executive Summary

The India Epidemic Intelligence Service (EIS) programme is a 2-year training programme in applied epidemiology based at the National Centre for Disease Control (NCDC), Delhi. The programme is modelled after the EIS Programme at the US Centers for Disease Control and Prevention (CDC). India EIS trains officers to develop public health skills while working with various public health agencies/programmes in the country. State and central public health agencies (or equivalent local autonomous bodies) recommend and forward the applications of interested employees. If selected, the state/central agencies release their public health employees to NCDC for two years to undergo the training. Interested professional with relevant public health background and not working with any government agency can also apply directly. Selection is through a highly competitive process by a committee of experts.

Selected applicants also called EISOs during their training, are assigned to work in a public health programme (field placement sites) for two years. During this period, they work under the guidance of a mentor and field placement supervisor. They provide service to their assigned field placement site while completing the Core Activities of Learning (CALs). Completion of all CALs is required for successful completion of the programme. CALs include field investigation such as outbreak investigations, evaluation of a surveillance system, in-depth epidemiologic data analysis, scientific abstracts, oral presentations, and manuscript writing. While the EISOs spend about 80% of their time working at their field placement sites, the EIS programme conducts short courses, weekly seminars, and workshops for the EISOs. They are also encouraged to participate in high-level expert group meetings, joint monitoring missions; and present scientific abstracts in National/International conferences.

The EISOs have the opportunity to earn a Master in Applied Epidemiology (MAE) degree from the Hemwati Nandan Bahuguna Uttarakhand Medical Education University (HNBUMU). The Master's programme is integrated with the India EIS training. The EISOs are required to clear examinations conducted by the University from time to time and fulfil other criteria laid down by the University to earn the MAE degree. The MAE-EIS degree will help EISOs to have a defined career path, and diversify career opportunities in the field of public health.

Background

Adequately trained public health workforce is integral to a resilient health system. Field epidemiology is an important discipline of public health workforce. NCDC is India's national public health institution under the Directorate General of Health Services, Ministry of Health & Family Welfare (MoHFW), Government of India. It is the nodal agency for the Integrated Disease Surveillance Programme (IDSP) and the national focal point for implementation of the International Health Regulations (IHR). It is also a WHO Collaborating Centre for Epidemiology and Training since 1995 and has been conducting short- and long-term field epidemiology trainings for more than three decades.

To establish and enhance field epidemiology capacity in the country, the National Centre for Disease Control (NCDC) launched India Epidemic Intelligence Services (EIS) Programme in 2012 on the lines of the programme of the Centers for Disease Control and Prevention (CDC), Atlanta, USA.

The India EIS programme is a competency-based two-year field epidemiology training. EIS Officers (EISOs) learn field epidemiology skills in disease surveillance, outbreak investigation, data analysis and in addition provide epidemiology services in association with various public health agencies/programmes using a training-through-service approach. In contrast to classroom-based public health academic programmes, the India EIS is a high-quality, mentor-based field epidemiology training programme. The EISOs learn while providing epidemiological services in their field placement sites during the training. This training programme aims to build national capacity and produce future leaders in epidemiology and public health practice.

The Hemwati Nandan Bahuguna Uttarakhand Medical Education University (HNBUMU), also known H.N.B. Uttarakhand Medical Education University, is a medical education state university located at Dehradun, Uttarakhand, India. It was established in 2014 by the Government of Uttarakhand through the Hemwati Nandan Bahuguna Medical Education University Act, 2014. It has jurisdiction on all medical, dental, nursing and para-medical college in the state of Uttarakhand. Its affiliated colleges include three medical colleges, 27 nursing colleges and 22 paramedical colleges.

In 2022, the NCDC and H.N.B. Uttarakhand Medical Education University collaborated to offer MAE-EIS degree to the EISOs after successful completion of training requirements and University exit exams. The MAE-EIS degree will help EISOs to have a defined career path in public health management cadres at national/sub-national levels, and diversify career opportunities in the field of public health.

How does an organization benefit from the India EIS training programme?

- **Organizations benefit by capitalizing on world-class training that equips their employee with epidemiological skills**
- **EISOs return to their nominating organizations, after two years, as highly skilled epidemiologists who can respond to public health emergencies (e.g. outbreaks, disaster response), strengthen surveillance, and improve public health programmes**
- **An investment in EIS yields rich dividends as alumni will be able to leadpublic health programs and provide training and mentorship to other public health personnel**

Why should I apply for the India EIS training programme?

- **The training prepares public health professionals to be next generation leaders in government of India, state health departments, international agencies, schools of public health, and other reputed agencies and institutions**
- **Graduates of the programme have an opportunity to earn a Master in Applied Epidemiology degree to diversify their career options in publichealth.**
- **Graduates become part of a large global network of highly skilled FETP alumni to leverage resources and public health work opportunities**
- **EISOs get an opportunity to respond to outbreaks and provide epidemiological services during public health emergencies and learn from public health leaders**
- **EISOs learn effective communications while making presentations during national and international conferences**

India Epidemic Intelligence Service (EIS) Programme

In India, there is a dedicated cadre of public health professionals in some states, but many states lack applied epidemiological capacity. To address this need, NCDC launched the India EIS programme on October 4, 2012, in collaboration with US CDC. India EIS is a 2-year programme in applied epidemiology in which the officers develop their skills while working with various public health agencies/programmes in the country. The programme focuses on hands-on training in epidemiologic service for public health professionals. Trainees, called EISOs, engage in outbreak investigations, design and analyses of epidemiological studies, analysis and evaluation of surveillance data, scientific communication, and other activities in preparation for their careers as field epidemiologists.

Selection is through a highly competitive process by a committee of experts. The selected EISOs are assigned to a field placement site for two years under the guidance of a placement supervisor and mentor. The officers who complete the programme benefit from acquiring public health skills, career opportunities and many get an opportunity to play a leadership role in country's public health operations. Extremely keen and enthusiastic candidates with an aptitude for public health are preferred. National newspapers and websites of MoHFW and NCDC provide programme information, application process, and timelines for selection process.

EISOs spend about 80% of their time in a field placement site, typically in national and state health programmes, NCDC programme divisions, state and district surveillance units. The EIS training involves rigorous fieldwork and extensive travel across India at short notice. Among other requirements, EISOs have to complete at least three outbreak investigations and a planned epidemiological study to meet the core competencies of training. The criteria for successful award of the India EIS training certificate is detailed in the section on Core Activities of Learning.

The EISOs are also enrolled with the HNB University for a Master in Applied Epidemiology. They are awarded a MAE-EIS degree after clearing written and oral exams conducted by the University based on course work, detailed in the section on MAE-EIS Course Curriculum.

Eligibility criteria

The minimum essential qualifications are:

1. MD (Public Health/Preventive and Social Medicine/Community Medicine) **OR**

   MD/MS (Clinical or Para-Clinical); **OR**

   MBBS with Postgraduate Diploma in Clinical, Paraclinical, or Public Health from any recognized institution with 3 (three) years of public health experience/working in National or State Health Programs; **OR**

   BDS/BVSc with Master in Public Health (MPH) from any recognized institution with 3 years of public health experience/working in National or State Health Programs; **OR**

   MBBS from any recognized institution with minimum 5 (five) years work experience in public health/working in National or State Health Programs.
2. Age: Not exceeding 45 years as of the last date of application

State-sponsored candidates

State-sponsored candidates should be working in central or state government (e.g., ESI, railways, state or municipal corporations, local bodies, defence, para-military forces, medical colleges, autonomous bodies, etc.) and PSUs.

Applicants working for state or central agencies need to initiate 'No Objection Certificate (NOC)' process from their sponsoring agency before applying. The applicant is required to forward their application to NCDC through proper channel. State and central government agencies are required to depute/nominate/release on study leave, the selected applicant for the 2- year programme. The sponsoring authorities are encouraged to nominate only employees who are enthusiastic and can be released for the training. Nomination does not automatically guarantee selection for the programme. The decision to select candidates will rest with NCDC through a highly competitive process. Salary and other admissible allowances during the training will be borne by the sponsoring authority.

Self-sponsored candidates

Self-sponsored candidates do not require nominations. They can apply directly if fulfilling the eligibility criteria. If selected, self-sponsored candidates will be paid an honorarium by NCDC to support them through the training period.

Application process

Detailed advertisement seeking application from interested candidates is published in all prominent newspapers and the NCDC/ HNB Uttarakhand Medical Education University website.

The applicant is required to submit the following by the designated deadline:

1. Complete application (available on NCDC website) including brief essay describing reasons for applying to India EIS programme
2. Curriculum vitae

Applications will be screened to ensure they meet eligibility criteria and are shortlisted.

A written test/screening test may be conducted if required for shortlisting candidates at the discretion of the HNB Uttarakhand Medical Education University and NCDC, Delhi.

Applicants invited for personal interview will be required to provide the following:

3. Proof of initiating 'No Objection Certificate' from the employer (government-sponsored candidates only)
4. Aadhar card
5. Original and self-attested copies of 10th, 12th, MBBS, and any other relevant degree
6. Experience certificate
7. Other documents as prescribed

Selection process:

An independent selection committee will oversee the interview and selection process. The decision of the selection committee will be reviewed and approved by competent authority of MoHFW.

The selection process will be based on merit, relevant professional experience and overall aptitude and attitude of the candidate. Reasonable efforts will be made to have equitable selection with representation of candidates from the Empowered Action Group (EAG) states, women applicants and central government. Two seats are earmarked for candidates sponsored by the Uttarakhand government/ self-sponsored candidate from Uttarakhand state. If no candidates are available from Uttarakhand, then these two seats are opened.

Intake

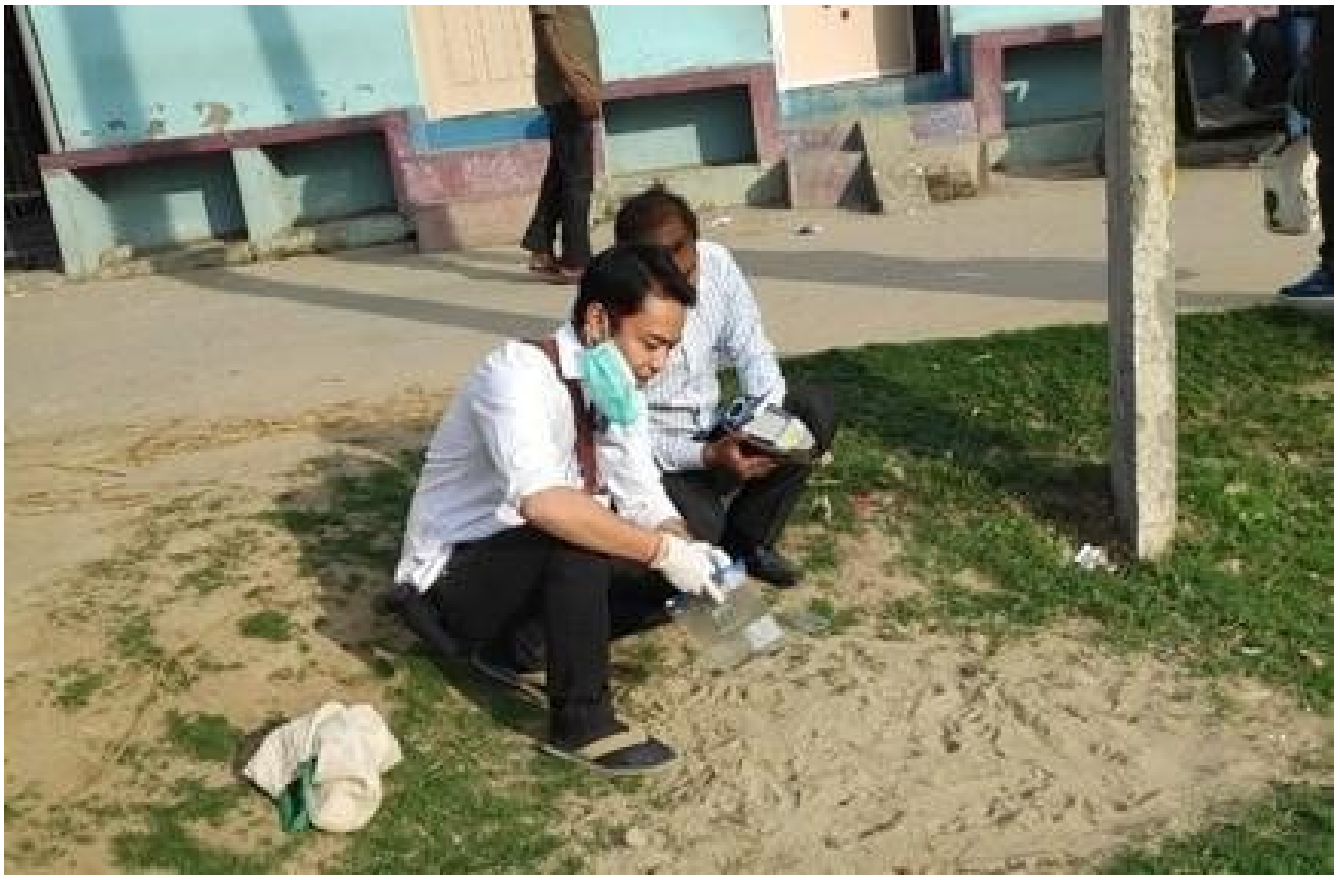
At present NCDC has capacity for intake of a minimum of 25 candidates. Preference in selection will be given to the government-sponsored candidates for at least 15 seats.

Allowances

Selected officers will be provided the following allowances:

1. ₹ 1,00,000 per month for self-sponsored EISOs
2. ₹ 35,000 for government-sponsored EISOs
3. Support for travel during field investigations
4. Book allowances as per rules
5. Laptops are provided to EIS officer (as per availability)

Undertaking: Officers on joining the programme are required to submit an undertaking to the effect that they will complete the two-year course and not leave the training in between. In case of leaving the programme in between, removal from the programme for non-satisfactory performance, the officers will be required to reimburse allowances borne by the government of India.



EIS officer testing soil sample for lead during survey in Patna district, Bihar, February 2020

Core Activities of Learning

The EISOs develop defined field competencies during the two-year training. These competencies are called core activities of learning (CALs). CALs include a combination of field epidemiological investigations and scientific communications.

Field CALs

1. Surveillance system evaluation
2. Surveillance data analysis
3. Field investigations (e.g., outbreak investigations): minimum of three quality investigations
4. Epidemiological data analysis (primary data collection or secondary data analysis)

Scientific Communication CALs

1. Scientific abstract: EISOs are required to submit abstracts to international (e.g.- US EIS Conference and TEPHINET Conferences, etc.) and national conferences (e.g., Indian Public Health Association, Indian Society of Malaria and Other Communicable Diseases, etc.). Only EISOs whose abstracts are accepted are considered for support to attend that conference. In addition, EISOs are required to present at FETPICON.
2. First author scientific manuscript draft
3. Short oral presentation (5-10 minutes) in a national or international conference
4. Long oral presentation (30 minutes) for weekly seminar

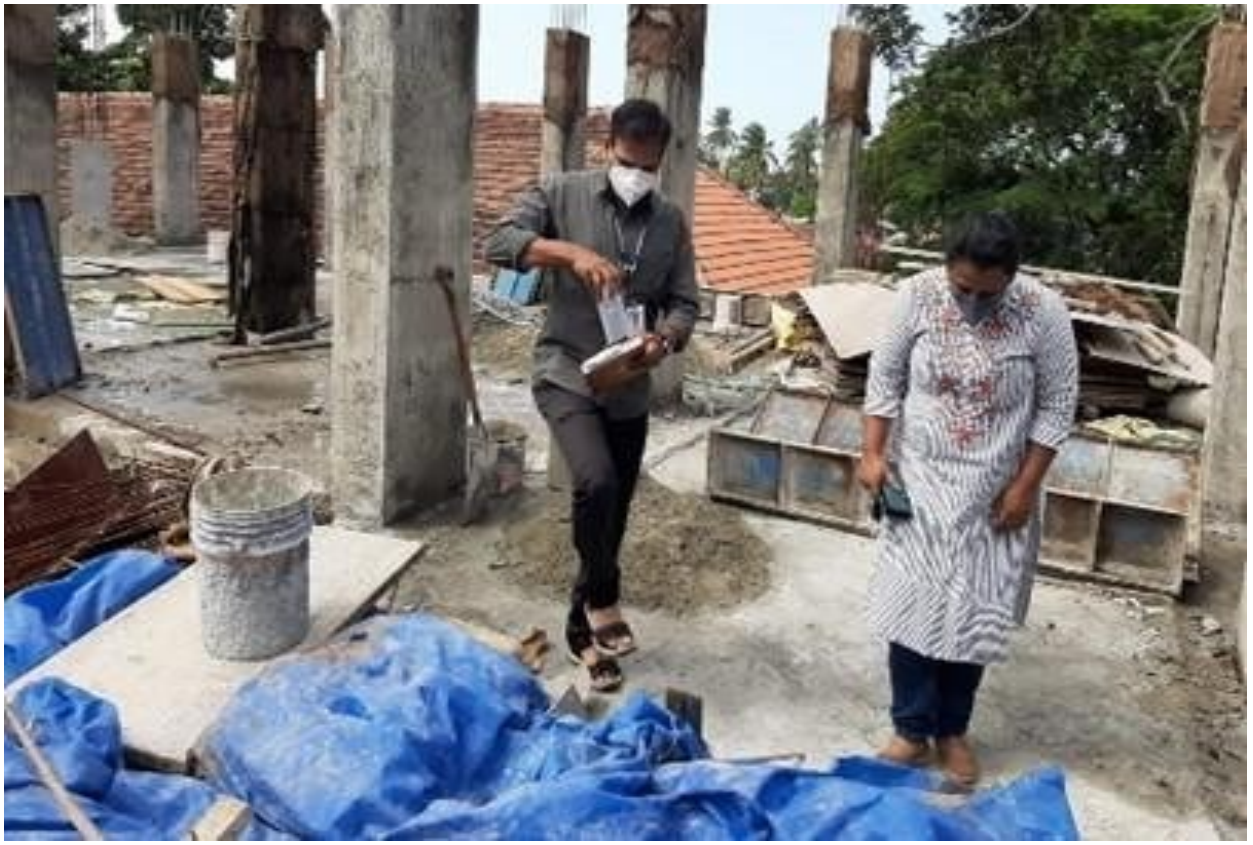
In addition to these CALs, EISOs will receive training in the following:

- Weekly seminars provide a forum for acquiring public speaking skills, peer-to-peer learning, experience sharing and critical analysis of scientific work. At least 80% attendance is mandatoryduring the EIS training
- Workshops for use of computer applications such as, Microsoft Office (Word, Excel, PowerPoint),EpiInfo, Epicollect, etc.
- Workshops for role of the laboratory in epidemiology, including knowledge and skills for collection, transport, storage of clinical specimens, interpretation of laboratory reports, and infection prevention control including appropriate use of PPEs
- Scientific writing workshops

Evaluation of CAL Completion

CAL completion is an essential requirement for awarding the EIS completion certificate to the EISOs. Certain deliverables are identified for each CAL. EISOs work on each of these deliverables under the guidance of field placement supervisor, mentors and programme staff. The deliverables include investigation/ evaluation or data analysis reports, scientific presentations and draft manuscripts. Each deliverable is critically reviewed and multiple cycles of suggestionsare given for revision by the mentors and field placement supervisors. After their approval, the deliverables are presented to the EIS programme. The CAL is considered completed after NCDC administrative approval. The EIS cell in the NCDC epidemiology division is responsible for CAL monitoring, coordination and, other implementation and administrative aspects.

Every six months, the mentor and field placement supervisor conduct a formal evaluation with the EISO. The evaluation assesses the EISO's progress towards the completion of the CALs, mentor's and field placement supervisor's assessment of the EISO's proficiency in epidemiologyskills, scientific communication skills, and professionalism. Additionally, after a field deployment, the EISOs also share written feedback regarding the quality of mentorship support,access to field and, logistics related to travel, sample transportation (if required) and coordination with other departments for data sharing. Terminal evaluations are conducted by NCDC to review overall CAL completion status of the trainee EISO for award of the India EIS training certificate.



EIS officer inspecting mosquito breeding site during Zika Virus outbreak Investigation in Thiruvananthapuram district, Kerala, July' 2021

MAE-EIS Course Curriculum

Year 1	Year 2
Academic Content	
Module 1: Basic epidemiology & basicbiostatistics Module 2: Disease surveillance Module 3: Outbreak investigation Module 4: Analysis of public health data Module 5: Computer applications in public health	Module 1: Epidemiologic research Module 2: Advanced epidemiology Module 3: Scientific communication
Field Work	
1. Surveillance data analysis 2. Surveillance system evaluation 3. Outbreak investigation 4. Oral/poster presentation at conference 5. Weekly seminar presentation	1. Planned epidemiological study 2. Outbreak investigation 3. Oral/poster presentation at conference 4. Weekly seminar presentation 5. Thesis*
Term I Evaluation	**Term II Evaluation**

Epidemiological study undertaken during the programme will be considered equivalent to the thesis.

MAE-EIS Course outline

1. The Master in applied Epidemiology is a modular training spread over two years.
2. Instruction methods will include field deployments, lectures, and other hands-on methods. Trainee will be placed in a national or state public health programme/ institution during the course period.
3. Majority of the course period (20 months) will be field based with daily reporting to mentor/ guide/ placement supervisor, with maximum of 3 months contact sessions at HNB Uttarakhand Medical Education University/ NCDC.
4. Planned epidemiological study during the second year would be taken up as MAE dissertation.
5. The HNB Uttarakhand Medical Education University would conduct term exams at the end of 1st year and 2nd year. The examinations would be held at NCDC Delhi/ HNB Uttarakhand Medical Education University.

Course Fees

1. The course fee will be borne by the candidates.

Course Examination & Distribution of Marks by Subjects

Year 1

Papers		Subjects	Marks	Grand Total	Pass Marks
I	Theory	Descriptive epidemiology & Disease surveillance	50	200	100
	Field work & Viva	Surveillance Evaluation Report	Report: 100		
			Viva: 50		
II	Theory	Descriptive statistics	50	200	100
	Field work & Viva	Surveillance Data Analysis	Report: 100		
			Viva: 50		
III	Theory	Outbreak Investigation	50	200	100
	Field work & Viva	Outbreak Investigation Report	Report: 100		
			Viva: 50		

Year 2

Papers		Subjects	Marks	Grand Total	Pass Marks
I	Field work & Viva	Planned Epidemiological Study	Report: 100	150	75
			Viva: 50		
II	Field work & Viva	Analytical OBI Report	Report: 100	150	75
			Viva: 50		
III	Practical & Viva	Scientific Communication (Conference Abstract + Presentation Slides or Poster)	Abstract/ Presentation: 100	150	75
			Viva: 50		
Thesis*			Thesis*: 100	200	100
			Viva: 100		

Epidemiological study undertaken during the programme will be considered equivalent to the thesis.

EISOs obtaining less than 50% on a paper will be deemed to have failed. A candidate failing a paper will be allowed to re-take the failed paper (i.e., re-take a failed written and viva of the paper; revise the report) as per the timeline followed by the University. If any exam or portion there-of remains with a failing grade twelve months after the 2nd year examination, no MAE degree will be conferred and the EISO will be given only EIS completion certificate, provided his CALs have been successfully completed.

Assessment structure

Written exams are for 50 marks and consist of 30 multiple choice questions (1 mark each) and four short answer questions (5 marks each). The duration of the examination will be as per university norms.

Practical exams focus on assessing formative aspects and will evaluate all the fieldwork conducted by the EISOs over the two years (i.e., surveillance system evaluation report, surveillance data analysis, planned epidemiological study and outbreak investigation report, abstracts and conference presentations). Each report will be worth 100 marks with marks distributed as follows:

Content to be Graded	**Marks**
Executive summary	10
Introduction	10
Methods section	20
Results section	20
Conclusions	10
Recommendations	10
Structure and argument quality	8
Quality of writing	6
Format and style (including references)	6
Total	**100**

The abstracts/conference presentation would be graded as follows:

Content to be Graded	**Marks**
Introduction	25
Methods	25
Results	25
Discussions	25

Oral exams/viva voice are summative assessments worth 50 marks. EISOs will

- make a presentation of their findings as discussed in the written report (25 marks)
- respond to the questions asked to them (25 marks)

Eligibility criteria for appearing in exams

EISOs must attend at least 80% of a course to be eligible to take the exam for that course.

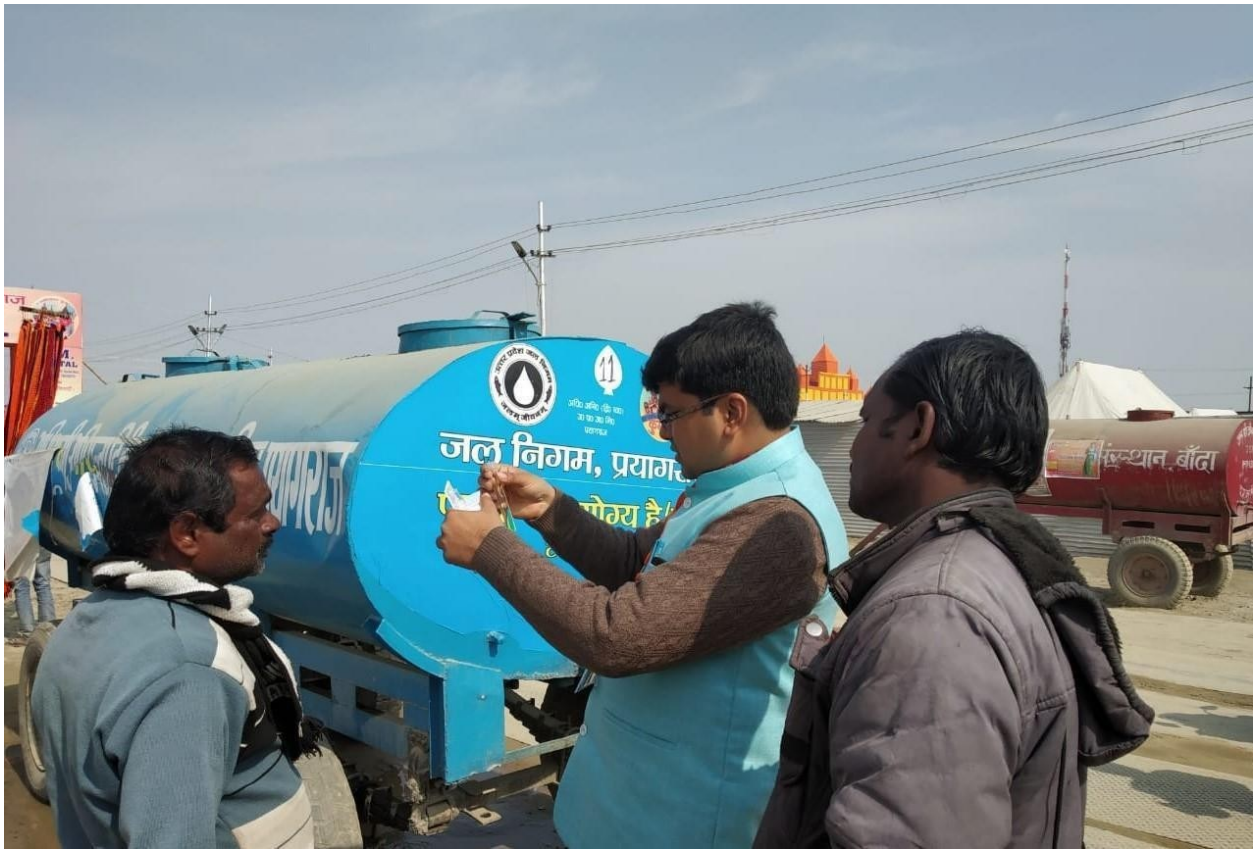
Thesis/Epidemiological study

The thesis/epidemiological study is a write-up of a completed planned study including background, methods, results, discussion, references, and appendices as applicable. Preferably, the topic of the thesis/epidemiological study will be the same as that for the planned epidemiological study, but this can be changed if need arises. Each EISO will be assigned a thesis/epidemiological study supervisor to provide guidance in the writing process. Thesis/ epidemiological study supervisors will be chosen following University criteria. The field work for the thesis/epidemiological study would be for six months and the three months will be designated for thesis/epidemiological study writing. The thesis/epidemiological study will be graded as a document (see grading criteria above) and the EISO will be required to take part in oral defense of thesis/epidemiological study.

Degree and Certification

A certificate of completion of EIS training will also be awarded to the EISOs at the end of two years if they successfully complete all the CALs. The certificate is jointly signed by NCDC and US CDC.

The EISOs will be awarded the Master in Applied Epidemiology degree from HNB Uttarakhand Medical Education University on passing the term examinations to be conducted at the end of year one and year two respectively and CAL completion.



EIS officer monitoring water quality during Kumbh in Prayagraj, Uttar Pradesh, February 2019

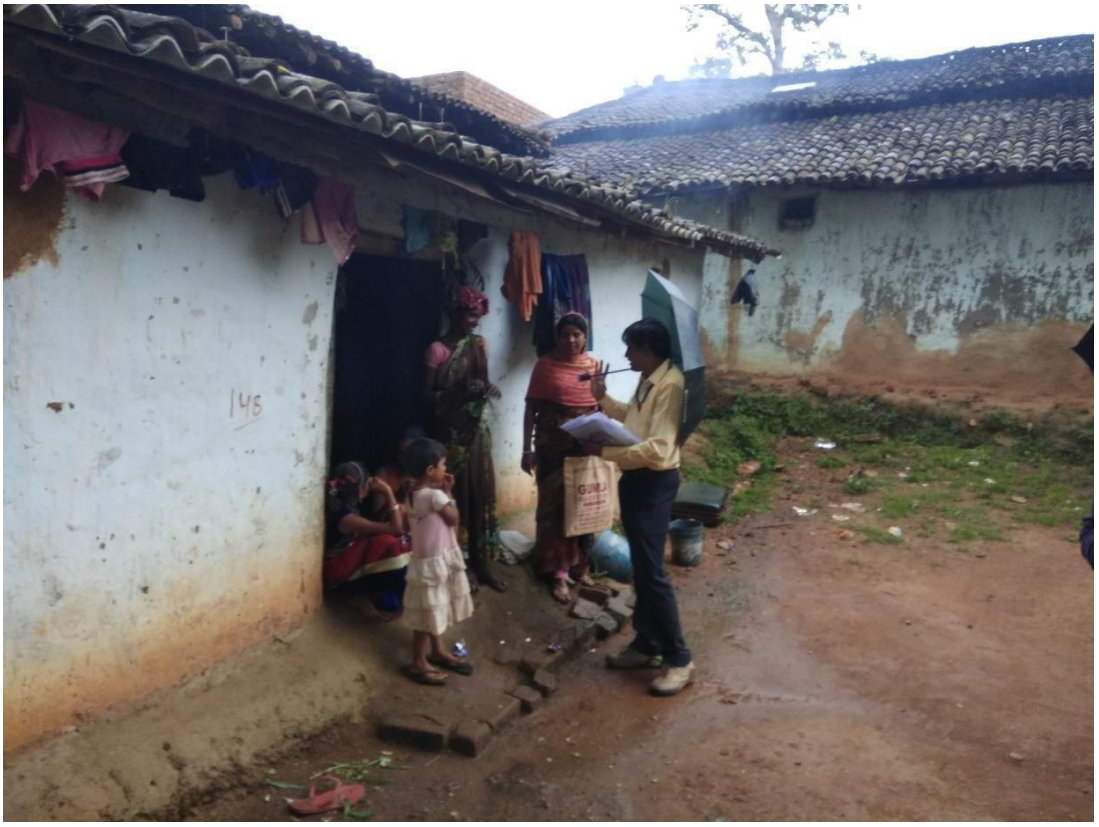
Field placement and public health deployments

Potential field placement sites are identified for each EISO. Criteria for selection of field placement sites include:

1. Availability of resources for an officer to complete the CALs
2. Access to surveillance and programme data
3. Availability of a field placement supervisor and mentor with time and expertise and, an understanding of the India-EIS Programme
4. An enabling environment with adequate administrative support

Field placement sites are selected by NCDC in consultation with stakeholders after expression of interest by the placement site. Potential field placement sites include national health programmes such as IDSP, programme divisions of NCDC, Revised National Tuberculosis Control Programme, National AIDS Control Programme, National Vector Borne Disease Control Programme, National Programme for Prevention of Cancer, Diabetes, Cardiovascular Diseases, and Stroke, and state health departments.

Field placement supervisor is usually the head of the programme/institution where the EISOs are placed. Field placement supervisors provide opportunities to the EISOs to render epidemiology services in the programme, design and conduct field evaluations/ epidemiological studies and participate in programme monitoring. Additionally, the EIS cell also coordinates field deployment of the EISOs during public health emergencies, disasters, outbreaks or major public health events.



EIS officer during Anthrax outbreak in Gumla district, Jharkhand, August 2017

Training through mentorship

In addition to an assigned supervisor at the field placement site, EISOs are assigned a mentor with extensive public health experience and relevant technical expertise. The best way for EISOs to learn field epidemiology skills is through close mentorship while they conduct epidemiologic investigations or evaluations in a public health setting. Mentors provide technical oversight to EISOs in completing CALs. Mentors also provide professional guidance, facilitate resource availability and support through one-to-one interaction on regular basis.

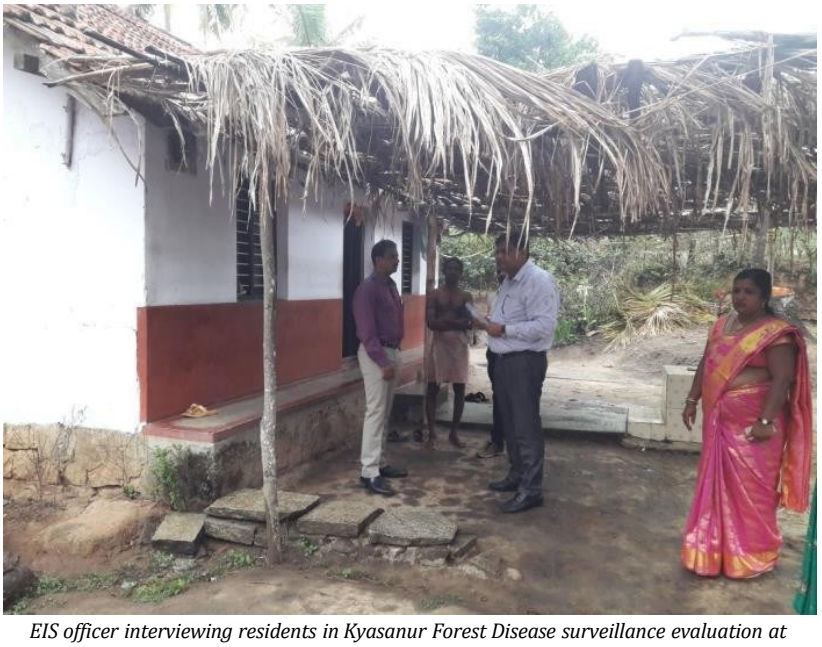
Conference support

The India EIS Programme supports EISOs to present their abstracts in a conference at least once during the two-year programme. Theprogrammeshares and recommendslist of high-quality national and international conferences with the EISOs. These conferences provide an opportunity to demonstrate the EISfieldwork to a broader public health community.

Career path

India EIS graduates are a pool of high caliber epidemiology resource for public health positions at the national and subnational level. EIS alumni currently serve in public health leadership positions in state governments, central government, academia, research institutions, municipal corporations, WHO, CDC, and NGO. EIS alumni also continue to contribute to the India EIS Programme as mentors.

Government of India strongly encourages sponsoring states or organizations to provide positions to appropriately utilize their trained EIS graduates. Graduates are typically placed in stateanddistrict-levelpublichealthpositions wheretheyareable to usetheirappliedepidemiology skills and contribute to enhancingdata-drivenpublichealthinterventions.



EIS officer interviewing residents in Kyasanur Forest Disease surveillance evaluation at Shivamogga district, Karnataka, April' 2017

Achievements of India EIS programme

Publications by EISOs

1. Shrivastava A, Srikanth P, Kumar A, Bhushan G, Goel K, Kumar S, et al. Outbreaks of unexplained neurologic illness - Muzaffarpur, India, 2013-2014. Morbidity and mortality weekly report. **2015**;64(3):49–53. https://pubmed.ncbi.nlm.nih.gov/25632950/
2. Kumar T, Shrivastava A, Kumar A, Laserson K F, Narain J P, Venkatesh S, et al. (2015). Viral Hepatitis Surveillance India, 2011-2013. Morbidity and mortality weekly report. **2015**;64(28),758–762. https://doi.org/10.15585/mmwr.mm6428a3
3. Dhanaraj B, Papanna M K, Adinarayanan S, Vedachalam C, Sundaram V, Shanmugam S, et al. Prevalence and risk factors for adult pulmonary tuberculosis in a metropolitan city of South India. PloS one. **2015**;10(4): e0124260. https://doi.org/10.1371/journal.pone.0124260
4. Yadav R, Garg R, Manoharan N, Swasticharan L, Julka P, Rath G. Evaluation of Delhi Population Based Cancer Registry and Trends of Tobacco Related Cancers. Asian Pacific journal of cancer prevention. **2016**;17(6):2841–2846.
5. Devi NP, Kumar AMV, Chinnakali P, Rajendran M, Valan AS, Rewari BB, et al. Loss to follow-up among children in pre-ART care under the National AIDS Programme, Tamil Nadu, South India. Public Health Action. **2017**;7(2):90–94. https://doi.org/10.5588/pha.16.0112
6. Goel K, Naithani S, Bhatt D, Khera A, Sharapov UM, Kriss JL, et al. The World Health Organization Measles Programmatic Risk Assessment Tool-Pilot Testing in India, 2014. Risk analysis: an official publication of the Society for Risk Analysis. **2017**;37(6):1063–1071. https://doi.org/10.1111/risa.12615
7. Shrivastava A, Kumar A, Thomas JD, Laserson KF, Bhushan G, Carter MD, et al. Association of acute toxic encephalopathy with litchi consumption in an outbreak in Muzaffarpur, India, 2014: a case-control study. The Lancet Global Health. **2017**;5(4): e458– e466. https://doi.org/10.1016/S2214-109X(17)30035-9
8. Yadav R, Swasticharan L, Garg R. (2017) Compliance of Specific Provisions of Tobacco Control Law Around Educational Institutions in Delhi, India. International journal of preventive medicine. **2017;** 8:62. https://doi.org/10.4103/ijpvm.IJPVM_239_16
9. Kumar T, Bhatia D, Kaur T, Vimal V, Aakash PS, Prakash NJ, et al. Vibrio Cholerae Outbreak in Batala Town, Punjab, India 2012. The Journal of communicable diseases. **2017;** 49:35-40. https://doi.org/10.24321/0019.5138.201705

10. Kumar T, Bhatia D, MahaLakshmi PV, Laserson KF, Narain JP, Kumar R. (2017) Risk factors for death during a resurgence of influenza-A (H1N1) pdm09 in Punjab State in 2013. Indian journal of public health. **2017**;61(1):9–13. https://doi.org/10.4103/0019-557X.200246
11. Padda P, Singla N, Sarin R. Surveillance, Evaluation of Programmatic Management of Drug Resistant Tuberculosis (PMDT) at DR-TB Centre, NITRD, New Delhi. Indian Journal of Community Health. **2018**;30(1):76–81. https://www.iapsmupuk.org/journal/index.php/IJCH/article/view/802
12. Moghe CS, Goel P, Singh J, Nayak NR, Dhuria M, Jain R, et al. (2019) Mumps outbreak investigation in Jaisalmer, Rajasthan, India, June-September 2016. Journal of medical virology. **2019**;91(3):347–350. https://doi.org/10.1002/jmv.25324
13. Choudhary S, Sahu R, Sodha SV, Dikid T, Aggarwal CS, Saroha E, et al. Outbreak investigation of acute diarrheal disease (ADD) during a religious mass gathering associated with drinking contaminated pipeline water, Radhakund, Uttar Pradesh, India, October — November 2016. The Columbia University Journal of Global Health. **2019**;9(2). https://doi.org/10.7916/thejgh.v9i2.4962
14. Yadav R, Somashekar D, Sodha SV, Laserson KF, Venkatesh S, Chauhan H. Post-Flood Rapid Needs Assessment in Srinagar City, Jammu and Kashmir State, India, September, 2014. Disaster medicine and public health preparedness. **2019**; 13(2):133– 137. https://doi.org/10.1017/dmp.2018.21
15. Nayak P, Sodha SV, Laserson KF, Padhi AK, Swain BK, Hossain SS, et al. A cutaneous Anthrax outbreak in Koraput District of Odisha-India 2015. BMC public health. **2019**;19(Suppl 3): 470. https://doi.org/10.1186/s12889-019-6787-0
16. Kumar T, Shrivastava A, Bhatia D, Mitra Y, Kumar A, Hussain S, et al. Jaundice outbreak likely caused by HEV in Amritsar, Punjab, India, 2013. BMC public health. **2019**;19(Suppl 3):464. https://doi.org/10.1186/s12889-019-6786-1
17. Goel P, Dhuria M, Yadav R, Khasnobis P, Meena S, Venkatesh S. Public health surveillance during Simhastha Kumbh, a religious mass gathering in Ujjain district, Madhya Pradesh, India, 2016. Indian journal of public health. **2020**;64(2):198–200. https://doi.org/10.4103/ijph.IJPH_53_19
18. Maramraj KK, Ml KL, Dikid T, Choudhary S, Reddy S, Jain S K, et al. An outbreak of acute skin and soft tissue infections including necrotizing fasciitis in Kalwala village, India, 2018: Public health implications for the lymphatic filariasis elimination program. Transactions of the Royal Society of Tropical Medicine and Hygiene. **2020**;114(10):742–750. https://doi.org/10.1093/trstmh/traa046

19. Aggrawal V, Dikid T, Jain SK, Pandey A, Khasnobis P, Choudhary S, et al. Disease surveillance during a large religious mass gathering in India: The Prayagraj Kumbh 2019 experience. International journal of infectious diseases. **2020**; 101:167–173. https://doi.org/10.1016/j.ijid.2020.09.1424

20. Dikid T, Chaudhary S, Goel K, Padda P, Sahu R, Kumar T, et al. Responding to COVID-19 pandemic: Why a strong health system is required. The Indian journal of medical research. **2020**;151(2&3):140–145. https://doi.org/10.4103/ijmr.IJMR_761_20`

21. Rastogi N, Goel K, Jain T, V Sodha S, Yadav R, Aggarwal S C, et al. Evaluation of National Injury Surveillance Centre, India, 2015-16. Indian Journal of Community Health. **2020**;32(1):51–56. https://doi.org/10.47203/IJCH.2020.v32i01.011

22. Maramraj KK, Subbalakshmi G, Ali MS, Dikid T, Yadav R, Sodha SV, et al. A community-wide acute diarrheal disease outbreak associated with drinking contaminated water from shallow bore-wells in a tribal village, India, 2017. BMC public health. **2020;** 20(1), 231. https://doi.org/10.1186/s12889-020-8263-2

23. Singh A, Gupta R, Dikid T, Saroha E, Sharma N C, Sagar S, et al. Cholera outbreak investigation, Bhadola, Delhi, India, April-May 2018. Transactions of the Royal Society of Tropical Medicine and Hygiene. **2020;**114(10):762–769. https://doi.org/10.1093/trstmh/traa059

24. Patel P, Athotra A, Vaisakh TP, Dikid T, Jain SK, NCDC COVID Incident Management Team, et al. Impact of nonpharmacological interventions on COVID-19 transmission dynamics in India. Indian journal of public health. **2020;** 64(Supplement), S142-S146 https://doi.org/10.4103/ijph.IJPH_510_20

25. Pasi A, Gaikwad P, Aroskar K, Kumar T, Teddy R, Kundu M, et al. Early detection of suspected cases of COVID-19: role of thermal screening at international airports in India. International Journal of Community Medicine and Public Healt.**2020**; 7(12):4817-4822. http://dx.doi.org/10.18203/2394-6040.ijcmph20204977

26. Chandrasekar P, Kumar S, Dzeyie K, Vignesh M S, Sankara D, Raveendran I, et al. Outbreak of ceftriaxone-resistant Salmonella enterica serotype Typhi attributed to eating chicken at hotel X, Tiruchirappalli, India, 2018. International Journal of Infectious Diseases. **2020;** 101:59–60. https://doi.org/10.1016/j.ijid.2020.09.186

27. Lowang D, Dhuria M, Yadav R, Mylliem P, Sodha SV, Khasnobis P. Measles outbreak among children ≤15 years old, Jaintia Hills District, Meghalaya, India, 2017. Indian journal of public health. **2021;** 65(Supplement): S5–S9. https://doi.org/10.4103/ijph.IJPH_960_20

28. Sheoran P, Rammayyan A, Shukla HK, Dikid T, Yadav R, Sodha V. An outbreak investigation of acute Diarrheal Disease, Nagpur District, Maharashtra, India. Indian journal of public health. **2021;**65(Supplement): S14–S17. https://doi.org/10.4103/ijph.IJPH_962_20

29. Sahu R, Ray AL, Yadav AK, Kunte R, Faujdar DS, et al. Acute gastroenteritis outbreak in a school associated with religious ceremony in Mirzapur District, Uttar Pradesh, India. Indian journal of public health. **2021**;65(Supplement): S18–S22. https://doi.org/10.4103/ijph.IJPH_1045_20

30. Dzeyie KA, Lowang D, Dikid T, Wangsu W, Tamir T, et al. Measles outbreak investigation at Indo-Myanmar border, Longding District, Arunachal Pradesh, India, 2017. Indian journal of public health. **2021;** 65 (Supplement): S23–S28. https://doi.org/10.4103/ijph.IJPH_1067_20

31. Patil AA, Velayudhan A, Durairaj GK, Khasnobis P, Sodha SV, et al. Outbreak investigation of foodborne illness among political rally attendees, Cuddalore, Tamil Nadu, India. Indian journal of public health. **2021;** 65(Supplement): S55– S58. https://doi.org/10.4103/ijph.IJPH_1069_20

32. Velayudhan A, Nayak J, Murhekar MV, Dikid T, Sodha SV, et al. Shellfish poisoning outbreaks in Cuddalore District, Tamil Nadu, India. Indian journal of public health. **2021;** 65(Supplement): S29–S33. https://doi.org/10.4103/ijph.IJPH_1070_20

33. Vardhan V, Dikid T, Yadav R, Patil R, Awate P, et al. Foodborne Disease outbreak associated with eating Gaajar Halwa at a Wedding - Palghar District, Maharashtra, India, 2018. Indian journal of public health. **2021;** 65(Supplement): S10–S13. https://doi.org/10.4103/ijph.IJPH_1099_20

34. Gupta G, Singh A, Dikid T, Saroha E, Sodha SV. Acute diarrheal disease outbreak in Muzaffarpur Village, Chandauli District, Uttar Pradesh, India. Indian journal of public health. **2021;** 65(Supplement): S34–S40. https://doi.org/10.4103/ijph.IJPH_1111_20

35. Kumar A, Grover G S, Dikid T, Kaur S, Patil A, et al. Foodborne illness outbreak linked to a rural community kitchen in a rural area of Patiala District, Punjab, India, 2018. Indian journal of public health. **2021;** 65(Supplement): S41–S45. https://doi.org/10.4103/ijph.IJPH_1112_20

36. Dutta BP, Kumar N, Meshram KC, Yadav R, Sodha SV, Gupta S. Cholera outbreak associated with contaminated water sources in paddy fields, Mandla District, Madhya Pradesh, India. Indian journal of public health. **2021;** 65(Supplement): S46–S50. https://doi.org/10.4103/ijph.IJPH_1118_20

37. Sharma S, Goel K, Kurup KK, Grover GS, Bhaskar R. COVID-19 in Punjab, India: Epidemiological patterns, laboratory surveillance and contact tracing of COVID-19 cases, March-May 2020. Clinical epidemiology and global health. **2021;** 11: 100769. https://doi.org/10.1016/j.cegh.2021.100769

38. Azarudeen M J, Aroskar K, Kurup K K, Dikid T, Chauhan H, Jain S K, Singh S K. Comparing COVID-19 mortality across selected states in India: The role of age structure. Clinical epidemiology and global health. **2021;** 12:100877. https://doi.org/10.1016/j.cegh.2021.100877

39. Dzeyie K A, Lowang D, Dikid T, Wangsu W, Tamir T. Measles Outbreak Investigation at Indo-Myanmar Border, Longding District, Arunachal Pradesh, India, 2017. Indian journal of public health. **2021;** 65(Supplement): S23-S28-29. https://pubmed.ncbi.nlm.nih.gov/33753588/
40. Singh SK, Murhekar M, Gupta S, Minh NN, Sodha SV. Building public health capacity through India epidemic intelligence service and field epidemiology training programs in India. Indian J Public Health. **2021;** 65(Suppl 1): S1-S4
42. Moghe C S, Thomas T, Aggarwal C S, Sharma S, Sodha S V. Malaria outbreak investigation in a tribal area of Pratapgarh district, Rajasthan, India, 2016. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
43. Azarudeen M, Naqvi S, Patil A, Dikid T, Kaushal K, Roy R, et al. Evaluation of National Leprosy Eradication Programme Surveillance System, Pandariya Block, Kawardha district, Chhattisgarh, April — June 2019. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
44. Vaisakh TP, Kumar R, Mishra A, Babu BS, Patel P, Dikid T, et al. Descriptive epidemiology of acute encephalopathy syndrome outbreak in Muzaffarpur district, Bihar, India from May–July 2019. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
45. Rastogi N, Goel K, Jain T, Sodha SV, Aggarwal CS, Venkatesh S. An Epidemiological Profile of Injury Patients Admitted in a Tertiary Care Hospital, New Delhi, India, 2015. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
46. Dundaiah S, Govindappa V B. Dengue outbreak investigation in East Delhi, India, 2015. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
47. Mishra A, Patil A, Roy N, Choudhary S, Dikid T, Jain S K, et al. Evaluation of Kala-Azar Surveillance System in Muzaffarpur District, Bihar, India, 2019. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
48. Moghe C, Arora P, Dhuria M, Singh S K, Mattu S, Jakhar N, Sahora E, Sodha S, Venketesh S. Evaluation of a symptom-based surveillance model for Ebola virus disease at Indira Gandhi International Airport, Delhi, India 2014–2015. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
49. Goel K, MahaLakshmi PV, Chaturvedi M, Thakur JS. Capacity building in public health emergency & hospital preparedness in India, 2019 - An experience sharing. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6
50. Patel P, Azarudeen M, Choudhary S, Kaur S, Pore M, Dikid T, et al. Cholera Outbreak Investigation in Sangli District, Maharashtra, India, 2019. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6

51. Dutta B P, Padhi S P, Bachanni D, Sodha S, Yadav R, Gupta S, Shaukat M, Pattnaik PKB, Aggarwal C S, Venkatesh S. Causes of non-compliance to the continuum of care among patients screened for hypertension or diabetes, Sundergarh district, Odisha, 2016. BMC Proceedings. **2021;** 15(Supplementary 11):17 https://bmcproc.biomedcentral.com/articles/10.1186/s12919-021-00223-6

52. Dzeyie KA, Dhanapaul S, Rubeshkumar P, Desing SK, Vignesh MS, Raveendran I, Outbreak of Ceftriaxone-resistant Salmonella enterica serotype Typhi-Tiruchirapalli, Tamil Nadu, India, June 2018. IJID Registered. **2021;** 4(1):60-64 https://www.sciencedirect.com/science/article/pii/S2772707621000096

53. Singh A, Talyan A, Chandra R, Srivastava A, Upadhya V, Mukhopadhyay C, et al. Risk factors for melioidosis in Udupi District, Karnataka, India, January 2017-July 2018. PLOS Global Public Health. **2022;** 2(12): e0000865 https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0000865

54. Aroskar K, Sahu R, Choudhary S, Pasi AR, Gaikwad P, Dikid T. Evaluation of point of entry surveillance for COVID-19 at Mumbai international airport, India, July 2020. Indian J Public Health **2022**; 66:67-70 https://www.ijph.in/text.asp?2022/66/1/67/342592

55. Srividya K. Vedachalam, Bhavesh L. Rajput, Sushma Choudhary, Darshan Narayanaswamy, Sharath Chandra, Pallavi D.M., Padma M. Rajagopal, Tanzin Dikid, Kyasanur Forest Disease: An Epidemiological Investigation and Case Study in Shivamogga, Karnataka, India – 2022 https://pubmed.ncbi.nlm.nih.gov/39494093/

56. Srividya K. Vedachalam, Bhavesh L. Rajput, Sushma choudhary, Bhuvaneshwari Arumugam, Ajit D. Shewale, Pallavi D. Mahadevappa, Padma M. Rajagopal & Simmi Tiwari, Descriptive epidemiology of Kyasanur forest disease in Thirthahalli taluk, Shivamogga, Karnataka, 2018–2022 https://doaj.org/article/ef44ff764d954d70a7bc764e31784d7f

57. Serin Kuriakose, Rajesh Kumar Gupta, Anuj Kumar, Jyoti Kumar, Sanket Kulkarni, Himanshu Chauhan, Vineet Relhan, V Meenakshy, Lakshmi Geetha Gopalakrishnan, S K Singh, Arti Bahl, Sukarma Tanwar, Tanzin Dikid, Clinical and Epidemiological Characteristics of Mpox Cases Identified Through Case-based Surveillance in India, July 2022-January 2023 https://pubmed.ncbi.nlm.nih.gov/39321225/

58. Anurag Dhoundiyal, Dr Sushma Choudhary, Dr Tanzin Dikid, Praveen Aswal, Dr Ravi Prakash, Dr Saurabh Goel, Investigation of a cluster of acute-onset seizures and deaths among children, Sirohi District, Rajasthan, April 2022 https://doi.org/10.31646/gbio.233

59. Nivethitha N, Purvi Patel, Babita Kamlapurkar, Sushma Choudhary, Mohan Kumar, Tanzin Dikid & Aakash Shrivastava Investigation of heat-related deaths at a mass gathering event, Maharashtra, India, April 2023 https://www.sciencedirect.com/science/article/pii/S3050456225000070?via%3Dihub

60. Srividya K Vedachalam, Arpan Kumar Thakur, Rasna Parveen, Mamta Puraswani, Sharad Srivastav, Aparna Ningombam, Kamini Walia, Valan A Siromany, Daniel VanderEnde, Paul A Malpiedi, Amber M Vasquez, Purva Mathur, Indian Healthcare Associated Infection Surveillance Network Collaborators, P25 Healthcare associated candiduria in ICU patients: experience from a surveillance network in India, 2017–22 https://academic.oup.com/jacamr/article/5/Supplement_3/dlad077.029/7235507
61. Influenza A (H1N1, pdm09) Outbreak in a College in Kanpur, Uttar Pradesh, India, September–October 2022, K. V. Srividya, Anuj Kumar, Sushma Chaudhary, Ramesh Chandra, Satish Kumar https://journals.lww.com/cids/fulltext/2023/01010/cidscon_2023_selected_abstracts.9.aspx

EIS officer testing soil sample for lead during survey in Patna district, Bihar, February 2020

Awards won at International conferences by EISOs

1. Third prize for best poster presentation at the Ist SAFETYNET Conference, Canberra, Australia (2023)
2. Sara Lowther FETP Memorial Award for case-control study on Leptospirosis in Sawai Madhopur District, Rajasthan, India (2023)
3. Third prize in photo contest for 11th TEPHINET, Global Scientific Conference, Panama (2022)
4. William H. Foege award for best oral presentation at FETP International Nights at Atlanta, US (2022)
5. Third best oral presentation award at 9th Bi-regional TEPHINET Global Conference in Lao-PDR (2018)
6. William H. Foege award for best oral presentation at the 67th Annual Epidemic Intelligence Service Conference at Atlanta, US (2017)
7. William H. Foege award for best oral presentation at the 66th Annual Epidemic Intelligence Service Conference at Atlanta, US (2016)
8. Third prize for oral presentation at the 8th TEPHINET Global Conference in Mexico City, Mexico (2015)
9. Best poster presentation at the 8th TEPHINET Global Conference in Mexico City, Mexico (2015)

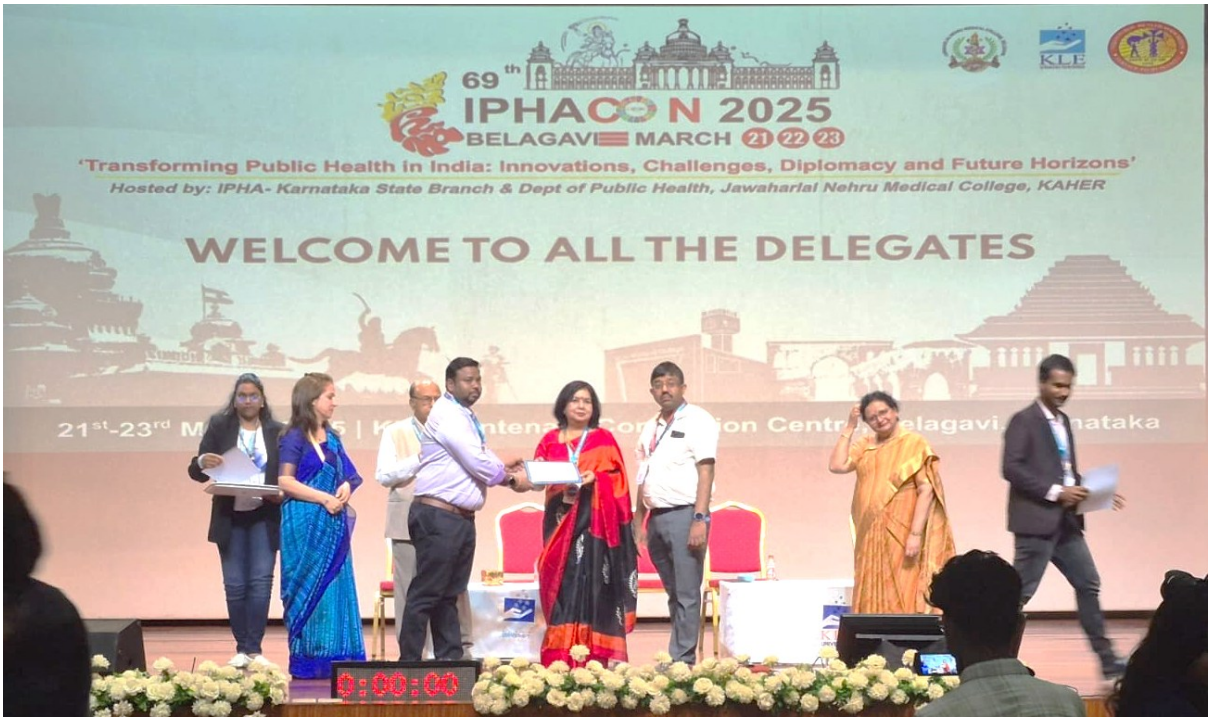
EIS officer receiving award for photo contest for 11th TEPHINET, Global Scientific Conference, Panama (2022)

Awards won at National conferences by EISOs

1. First prize in poster presentation titled "Evaluation of the digitization of National Programme for Non-Communicable Disease, Rajasthan, 2023" at IAECON 2025 from 07 to 08 March 2025 at Delhi, India
2. Winner in oral presentation titled "Clinical and epidemiological investigation to assess risk factors of a widespread, fatal pediatric outbreak of Chandipura virus Acute Encephalitis Syndrome in Gujarat, India July 2024" at IPHACON 2025 from 21 to 23 March 2025 at Belagavi, Karnataka, India
3. Winner in oral presentation titled "Assessment of health system preparedness during Magh Mela, Mass Gathering at Prayagraj, Uttar Pradesh, January-March 2024" at IPHACON 2025 from 21 to 23 March 2025 at Belagavi, Karnataka, India
4. Winner in poster presentation titled "Evaluating public health surveillance for measles and rubella: Insight from a state in India, 2024" at IPHACON 2025 from 21 to 23 March 2025 at Belagavi, Karnataka, India
5. First prize in poster presentation titled "Evaluation of the digitization of National Programme for Non-Communicable Disease, Rajasthan, 2023" at IPHACON 2024 from 15 to 17 March 2024 at Manali, Himachal Pradesh, India
6. First prize in oral presentation titled "Mixed-method evaluation of surveillance system in leprosy, Theni district, Tamil Nadu, 2023" at IPHACON 2024 from 15 to 17 March 2024 at Manali, Himachal Pradesh, India
7. First prize in oral presentation titled "Malaria outbreak investigation in block Gangeshwari, Amroha district, Uttar Pradesh, India, Jan- Feb 2023" at IPHACON 2024 from 15 to 17 March 2024 at Manali, Himachal Pradesh, India
8. First prize in oral presentation by EISOs titled Impact of Air Quality on Acute Respiratory Emergencies, Delhi, India, 2018-2022 at Field Epidemiology Training Programme India Conference, 2023 Varanasi, Uttar Pradesh, India
9. Third prize in poster presentation by EISOs titled Outbreak Investigation of Monkeypox Virus disease in India, 1 July – 28 September 2022 at Field Epidemiology Training Programme India Conference 2023 (FETPICON-2023) held at Varanasi, Uttar Pradesh, India
10. Best oral presentation under theme Environment Health and Occupational health, titled an outbreak of acute seizure illness Eluru, Andhra Pradesh, India, December 2020 in the 65th Annual National Conference of Indian Association of Public Health IPHACON 2021 at JIPMER, Puducherry
11. Best oral presentation under theme COVID epidemiology titled Investigation of COVID-19 outbreak in a tribal residential school, Washim District, Maharashtra, March 2021 in the 65th Annual National Conference of Indian Association of Public Health IPHACON 2021 at JIPMER Puducherry
12. First prize in oral presentation by EISOs titled Evaluation of Point of Entry Surveillance for COVID-19 at Mumbai International airport, India, 2020 in 48th Annual National Conference of Indian Association of Preventive and Social Medicine at PGIMER Chandigarh, March 2021
13. Best poster presentation award in sub theme, public health emergency, IPHACON 2017 in Jodhpur, Rajasthan

14. Best poster presentation award in sub them, communicable diseases, IPHACON 2017in Jodhpur, Rajasthan
15. Best poster presentation award in sub theme, one health, IPHACON 2017 in Jodhpur, Rajasthan
16. Best oral presentation award, IPHACON 2017 in Jodhpur, Rajasthan
17. Best oral presentation award in ISMOCD in Pune, Maharashtra, 2017

EIS officer receiving award after winning first prize in poster presentation for IAECON 2025 from 07 to 08 March 2025 at Delhi, India



EIS officer receiving award after winning oral presentation for IPHACON 2025 from 21 to 23 March 2025 at Belagavi, Karnataka, India

Graduated Cohorts

Cohort - 1

Cohort - 2

Cohort - 3

Cohort - 4

Cohort - 5

Cohort - 6

Cohort – 7

Cohort - 8

National Centre for Disease Control
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Ministry of Health and Family
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