

Epidemiological Surveillance of Infectious Diseases Course Report

11th of July 2021

Saudi Commission for Health Specialties; 17 accredited CME hours

Delivered by
WHO Collaborating Centre for Public Health Education and Training,
Imperial College London
on the 13th, 20th, 27th of June 2021

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The Public Health Authority has collaborated with the WHO Collaborating Centre for Public Health Education and Training at Imperial College London to create a new Public Health Academy for Saudi Arabia. The Public Health Authority, previously known as the Saudi Centre for Disease Prevention and Control (SCDC), is leading the work to transform the public health workforce across the Kingdom. The public health workforce encompasses a broad background in education and training, representing the functions they take on at work across many ministries, institutions, community organizations, and the private sector. Consequently, training needs to improve public health core knowledge and skills that are variable and require a wide variety of different learning models.

The development of *The Academy for Public Health* is part of the Authority's pioneering initiative across the Arab world. The Academy aims to provide a well-defined, structured, and sustainable professional development programme in public and population health for all staff with health and well-being responsibilities achieved by delivering Public Health training courses and workshops.

This Epidemiological Surveillance Course of Infectious Diseases is the first of many courses delivered by the now established Saudi Academy for Public Health.

Timetable

	Theme	Session 1 9.00-10.15 11.00-12.15 KSA	Session 2 10.30-12.00 12.30 -14.00 KSA	Session 3 12.30-15.30 14.30-17.30 KSA	Session 4 15.40-16.10 17.40 – 18.10 KSA
Day 1 13 th June	Surveillance as a cornerstone in public health practice	Introduction and Ice Breaker (WHOCC Team)	Principle of Surveillance and Response Systems (Professor Salman Rawaf / Dr Bayad Nozad)	Surveillance Exercise (Dr Bayad Nozad)	Assignment Task
Day 2 20 th June	Epidemiological surveillance data reporting system	Infectious Diseases Subject to Surveillance (Dr Elizabeth Dubois/ Ms Noor Al-Rubaye)	Surveillance tools and support functions Data collection, analysis, and interpretation (Dr Nada Lemic)	Exercises + Reporting and Feedback from Day 1 assignment ID Surveillance Data and Interpretation (Dr Andrew Howe/Professor Salman Rawaf)	Assignment Task
Day 3 27 th June	Epidemiological surveillance system attributes and performance assessment	Ahead of the Curve Thinking Foreshadowing strategy for combating infectious diseases (Dr Judy Curson / Professor Salman Rawaf)	Planning and Preparedness to Monitor Surveillance and Response systems (Dr Andrew Howe/Professor Salman Rawaf)	Reporting and Feedback from day 2 assignment Exercise on GAC for emerging infectious diseases [Use of epidemic curves] (Professor Salman Rawaf Dr Judy Curson/Ms Celine Tabche)	Assessment MCQs Ms Celine Tabche & WHO CC Team Wrap up (Professor Salman Rawaf)

Contributors:

- Professor Salman Rawaf (ICL) Director, WHO Collaborating Centre; Professor of Public Health
- Dr Bayad Nozad - Consultant in communicable disease control and health protection (PHE South-West) PHE/NHS
- Dr Nada Lemic – Stojevic – Director of Public Health, London Borough of Bromley; South-East London CC
- Dr Judy Curson–Former Director of Public Health; Public Health Consultant
- Dr Andrew Howe – Public Health Consultant
- Dr Elizabeth Dubois (ICL), Reseach Associate, Public Health Specialist, WHO Collaborating Centre
- Ms Celine Tabche (ICL) PhD Research Postgraduate, WHO Collaborating Centre
- Ms Ela L Augustyniak (ICL), Project Manager, WHO Collaborating Centre
- Ms Noor Al-Rubaye (ICL), Research Assistant, WHO Collaborating Centre
- Dr Mouhab Jamaladeen (ICL), Research Assistant, WHO Collaborating Centre

General Outlook

This training equipped the participants with the essential technical awareness and skill set to work with different surveillance systems. Throughout this three-day course, the focus has been on the surveillance system objectives, the data reporting process, fundamental surveillance characteristics, and performance appraisals. 24 participants have been nominated to attend this course based on their qualifications and background since the course had a specific target audience. An online blackboard platform was set up on the WHO Collaborating Centre (WHO CC) Imperial College London website. All the materials, presentations, exercises, and recordings have been uploaded and kept for the participants to use and review whenever they need with their login information.

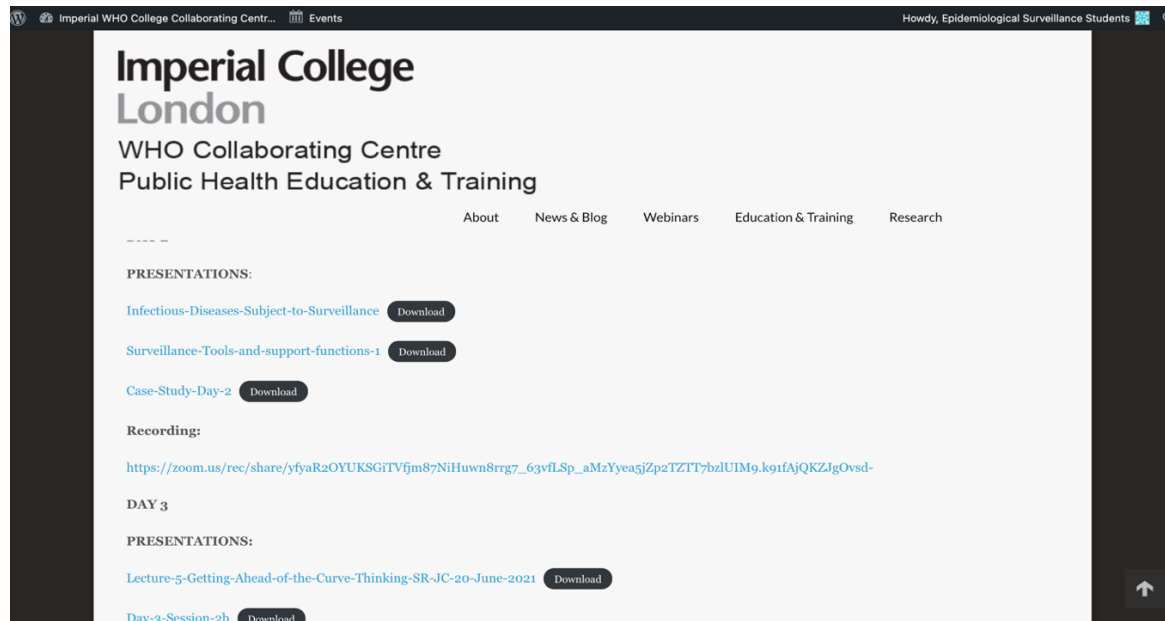


Image 1: A screenshot of the blackboard created for this course on the WHO Collaborating Centre's website.

Teaching methods involved a combination of short theoretical lectures as well as long interactive practical sessions. Practical applications used data relevant to contemporary issues in the epidemiological surveillance of infectious diseases, especially in the Kingdom of Saudi Arabia. Participants completed five projects either during the session or as homework. These were designed in a way to mimic the real problems faced by epidemiologists and public health professionals. These projects aimed to help participants engage in different activities such as reflection, application, mapping, analysis, and assessment.

The course was delivered every Sunday for three weeks through Zoom platform. Each day was around seven hours, where approximately two and a half hours were raw lecturing and questions, one hour was distributed as

a break throughout the day. The remaining time was exercise and case study solving through breakout rooms and presentation feedback by the participants in the main room. In the exercise session, instructions would be given out before the participants were separated to breakout rooms. Each breakout room had a member of the WHOCC team assisting participation and answering any potential questions.

At the end of the training, participants were evaluated through a Multiple-Choice Question (MCQ) test and two assigned projects. The MCQ test score composed 60% of the final mark, while each project accounted for 20% of the final mark (2x 20%). The participants were given a week after the last day of lectures (until the 4th of July) to complete the MCQ assessment; this gave them plenty of time to visit the blackboard and review the materials for passing the examination. Only the participants who passed the course were asked to provide feedback on the training sessions via an online questionnaire. The evaluation of the participants was based on their ability to define and understand the scope and the overarching picture of infectious diseases surveillance. Each feedback and exercise session are graded on the participant's ability to present with good content, accuracy, style, and organization, as mentioned in the course handbook.

The certificate for this course was only given out when they have fulfilled all of the following:

- Attended all three days of the course.
- Participated during the exercise session.
- Passed their feedback sessions and presentations evaluation.
- Passed the MCQ assessment at the end of the course.

Public Health Competencies addressed

The course was designed to equip public health professionals with the following competencies:

1. Know the features of demographic structure in a given society or community and understand the process of demographic change and its implications for public health.
2. Describe the key features of the epidemiology of the significant causes of morbidity and mortality in the population for which they have responsibility for
3. Use vital statistics and health indicators effectively to increase knowledge and generate evidence about population health, including at-risk and vulnerable groups.
4. Gain awareness of the population's health needs based on considerations of the burden of disease, indicators, characterization of risks and demand for, and access to health care.
5. Know and participate in developing and applying multisectoral evidence-based guidelines and systems for surveillance, prevention and control of diseases and other acute public health events.
6. Perform surveillance of risks and threats to the full continuum of factors that influence and determine health to identify intervention needs.
7. Know and participate in developing and applying multisectoral evidence-based guidelines and systems for surveillance, prevention and control of diseases and other acute public health events.

Learning Outcomes

Participants are now able to:

- Define what epidemiological surveillance of infectious diseases mean.
- Understand and describe the legalities of infectious disease reporting.
- Identify the basic functions of epidemiological surveillance of infectious diseases.
- Discuss the essential roles of healthcare workers, public health professionals, and governmental agencies in the epidemiological surveillance process.
- Discuss the different uses of surveillance data.
- List the different steps needed in forming a successful epidemiological surveillance system.
- Assess and evaluate an existing or a proposed surveillance system.
- Apply the principles of surveillance to healthcare-associated infection.

Structure

The course was divided into the following modules:

- I. Surveillance as a cornerstone in public health practice.
- II. Definition of surveillance objectives.
- III. Epidemiological surveillance data reporting system.
- IV. Epidemiological surveillance system attributes and performance assessment.

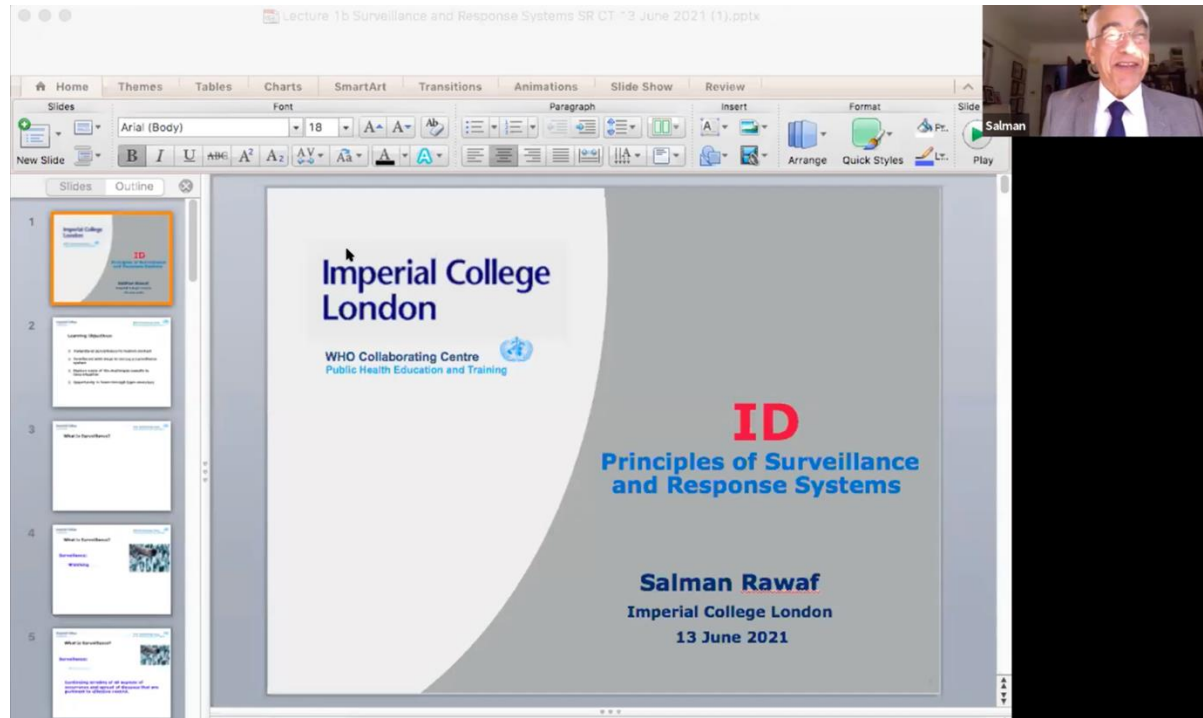


Image 2: Professor Salman Rawaf presenting his first lecture for this course on Infectious Diseases Surveillance.

Exercises

Day 1: Surveillance

Objectives:

- Raise awareness among participants about the importance of surveillance systems.
- Carefully determine the attributes required for a surveillance system concerning a specific disease (TB).
- Exercise putting theory into practice when setting up surveillance systems for infectious diseases (TB).

Laboratory confirmed seven day case rate



Image 3: Dr Nada Lemic going through a case rate in her lecture on surveillance tools and support functions.

Assignment to take home:

By picking one of the four topics listed below, the participants would have chosen the teams they would present with the following week. They were asked to research one topic and be able to discuss it with each other in the next session. During the feedback session, Day 2, the participants were given time before their presentations to prepare and practice as a group.

Topics:

1. Digital Surveillance: Definition, what is needed in your region, what needs to be improved if available.
2. What are the differences between surveillance and research? Main points that describe the differences. What is needed in your region now and in the future?
3. What are the best career pathways for those that take part in the Surveillance Systems in the KSA? Future outlook, what are the main pathways and what was needed during the pandemic. Are the job and field recognized in your region?
4. Accountability and Responsibility (missing early warning signs): Who needs to be held accountable, and who is responsible for these systems and the future. Including other pandemics that might be around the corner. Role of the law.

Day 2: A Case Study in Infectious Disease Surveillance.

Participants were asked to examine steps to identify an infectious disease outbreak, source, possible pathogens, and how a non-traditional surveillance system is helping public health officials keep track of epidemic trends.

Assignment to take home:

A table of data was given that showed the prevalence of measles among males and females between different age groups from 2017 till 2019. Questions included who the target population at risk is, how would you monitor the occurrence of measles, detect an epidemic, and plan the advice you would give to public health officials as a response.

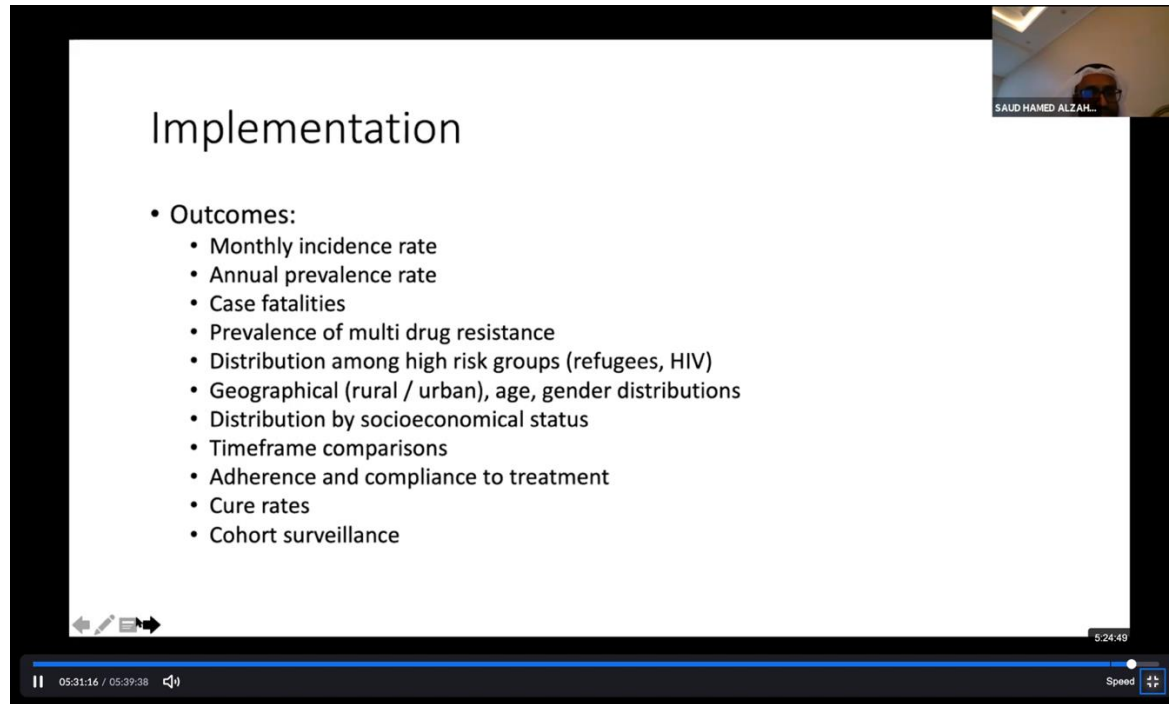


Image 3: A participant presenting his group's work on the exercise on surveillance.

Day 3: A Case Study on Getting Ahead of the Curve for Emerging Infectious Diseases

Participants were asked to oversee a public health authority or department responsible for an emerging disease like this ZIKV case study. Questions included what main factors to control, implications for the monitoring and evaluation process of the surveillance system, and which action must be taken if any delay in detection happened.

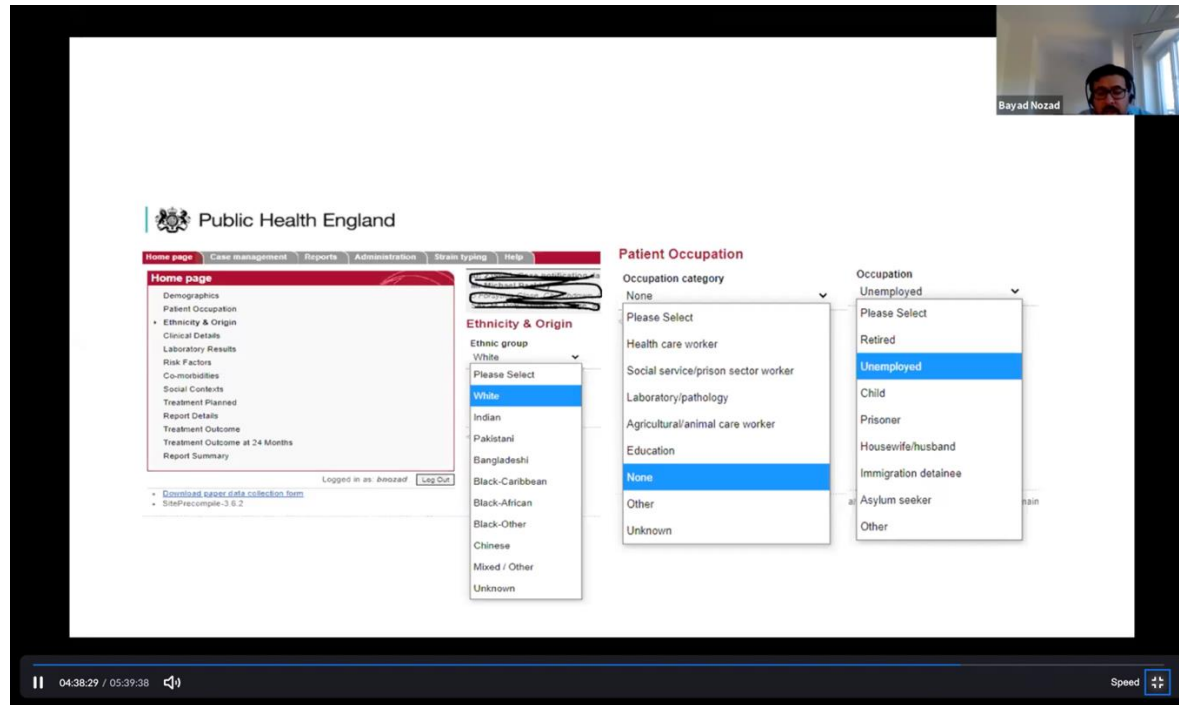


Image 5: Dr Bayad Nozad introducing the exercise to the participants before dividing them into breakout rooms for group work.

Attendance and Assessment

As mentioned previously, participants only received a certificate of completion upon attending all three days of the course and a passing grade for the assessments.

Out of the 24 participants that have signed up, 19 have completed all the necessary requirements for this course and received their report cards and certificates through emails. An Excel spreadsheet (Appendix 1) has been drafted since the beginning of the course that tracks their attendance, participation grades,

feedback, and assessments. Their total grade has been calculated according to the marking scheme mentioned in the handbook. The breakdown of their result has been included in their report card to ensure maximum grade transparency (Appendix 2).

Exceptions were made for the participants that had a valid reason not to attend one day of the course. They were given the opportunity to go back and watch the recorded sessions on the blackboard and solve the homework assignment to be granted access to sit the MCQ assessment.

Feedback

A feedback survey has been sent to the participants after they have finished all the requirements needed to pass this training course. This survey included questions about how they found each lecture and if they had any suggestions for improving the delivery of this course. Overall, the average rating of each class was 2.6 (1: poor; 3: excellent). The general reviews were that they found the course very useful and practical. And many wanted more exercises to work on, even though each day ran for more than 6 hours. Several reached out privately and showed appreciation with kind words on the successful delivery of the first course by the Saudi Academy for Public Health in collaboration with the team at the WHO Collaborating Centre for Public Health Education and Training, Imperial College London.


Appendix 1

The table below is a small sample extracted from the excel spreadsheet created for the participants of this course. Their names and details were removed for confidentiality.

Name of participants	SCFHS numbers	Sector	Region	Date of nomination	Email	Mobile	Day 1 Attendance	Day 2 Attendance	Day 2 Feedback (20%)	Day 2 Feedback Grades Breakdown	Day 3 Attendance	Day 3 Feedback (20%)	Day 3 Feedback Grades Breakdown	MCQ Grades (60%)	Total	Comments
X	Will not receive a certificate	MOH	Hail	06-Jun-21					0	N/A		0	N/A	Not eligible	N/A	Will not receive a certificate
Y		MOH	Jeddah	12-Jun-21					84.3% Good Participation - most prepared	Content (50%): 80 Accuracy (20%): 90 Style (15%): 85 Organization (15%): 90		86.3% Good Participation - most prepared	Content (50%): 90 Accuracy (20%): 90 Style (15%): 75 Organization (15%): 80	32 / 36 (88%)	86.9% - OUTSTANDING DISTINCTION	
Z		SCDC	Jeddah	06-Jun-21					50% - recorded sessions	N/A		51.3% - Ok	Content (50%): 55 Accuracy (20%): 55 Style (15%): 45 Organisation (15%): 40	29 / 36 (80%)	68.3% - MERIT	
Q		SCDC	Jazan	12-Jun-21					71.5% Good Participation	Content (50%): 75 Accuracy (20%): 65 Style (15%): 75 Organization (15%): 65		79.3% Good Participation - most prepared	Content (50%): 75 Accuracy (20%): 85 Style (15%): 80 Organization (15%): 85	26 / 36 (72%)	73.4% - DISTINCTION	

Appendix 2

The template for the report card created for this course.



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WHO Collaborating Centre
Public Health Education and Training

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PUBLIC HEALTH AUTHORITY

Epidemiological Surveillance of Infectious Diseases Course

Transcript

Dear [REDACTED]

Congratulations on completing this three-day interactive online training course! Please find your grade breakdown below!

Attendance		100 %
Day 2 Feedback and Participation (20%)	Content	75 %
	Accuracy	65 %
	Style	75 %
	Organisation	65 %
Day 3 Feedback and Participation (20%)	Content	75 %
	Accuracy	85 %
	Style	80 %
	Organisation	85 %
MCQ Assessment (60%)		72 %
Total		73.4 % - Distinction

Thank you for your dedication!