

Field epidemiology and Behavioural Science

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What is field epidemiology?

The application of epidemiological knowledge, skills and competencies in surveillance of and response to urgent health challenges

First Field Epidemiology Training Programme set up in 1951 by US Centres for Disease Control and Prevention

Now 98 FETP in 163 countries

Public Health Wales is an active member of the UK FETP

[Defining Field Epidemiology | Field Epi Manual | CDC](#)

Field epidemiology and behavioural science?

2014-2016 Ebola outbreak in West Africa

[Lessons From the West Africa Ebola Epidemic: A Systematic Review of Epidemiological and Social and Behavioral Science Research Priorities | The Journal of Infectious Diseases | Oxford Academic](#)

SARS-CoV-2 pandemic (“...trust is one of public health’s biggest prophylactics”)

[Covid-19: What we have learnt from behavioural science during the pandemic so far that can help prepare us for the future | The BMJ](#)

Increasing recognition of social and commercial determinants in communicable disease epidemiology

[Field Epidemiology: Fit for the future - PMC](#)

Human behaviour is key determinant in communicable disease epidemiology: Example 1



[Using the internet for rapid investigation of an outbreak of diarrhoeal illness in mountain bikers](#)

Campylobacter outbreak at MTB event in Powys

161/347 ill

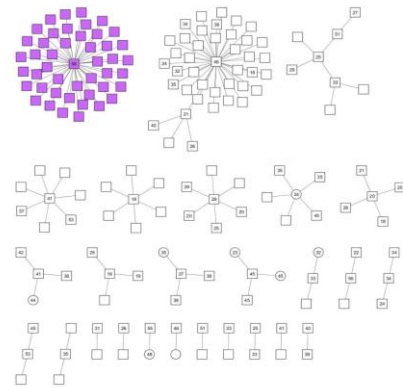
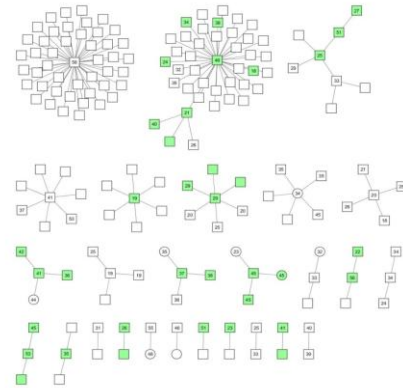
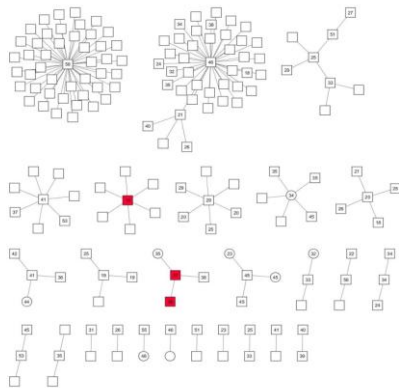
Ingestion of mud contaminated with sheep faeces

Acceptability of risk?

Human behaviour is key determinant in communicable disease epidemiology: Example 2

Outbreak of syphilis in men who have sex with men living in rural North Wales (UK) associated with the use of social media

Network diagram of North Wales syphilis outbreak indicating individuals known to use: mobile phone applications (green), cruising sites (red), or sauna (purple) to meet sexual partners



Human behaviour is key determinant in communicable disease epidemiology: Example 3

[An outbreak of Salmonella Typhimurium associated with the consumption of raw liver at an Eid al-Adha celebration in Wales \(UK\), July 2021 - PMC](#)

Genetic cluster of 22 people ill

Severe illness: 4 admitted to hospital, one to ITU

Consumption of traditional Sudanese appetiser marrara associated with illness (risk ratio 2.5)

Engagement work carried out



Field epidemiology and behavioural science working side-by-side

Risk assessing the return of organised mass gatherings during the pandemic at 'test events'.

[COVID-19 Personal Protective Behaviors during Large Social Events: The Value of Behavioral Observations](#)

[Developing a population data science approach to assess increased risk of COVID-19 associated with attending large events | International Journal of Population Data Science](#)

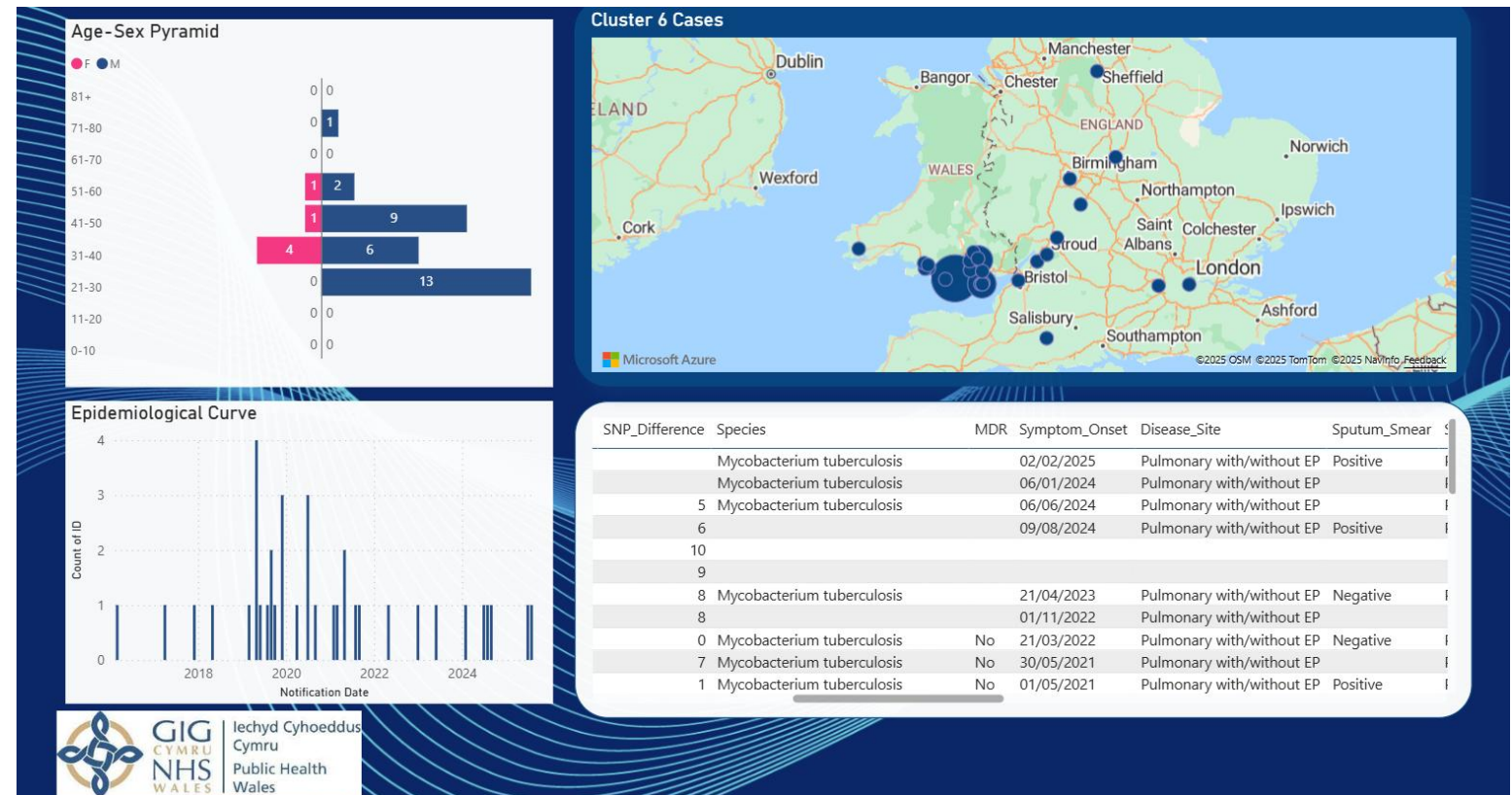


Behavioural scientists providing support in outbreak investigation

Long-standing tuberculosis genetic cluster

Piloting in-depth network tracing questionnaire

Motivational interview training from BS



Opportunity for better insights in public health surveillance evaluations

Example: Evaluation of Caesarean Section Surgical Site Infection Surveillance in Wales

Site H: "Sometimes that [SSI variable] is left blank and I don't know if that's because there isn't an infection or it's because the midwives are racing around and they just haven't got time..."

Site B: "... I have to try and fit this in when I can. You know, I haven't got the opportunity to set aside a day or an hour or anything like this. So it's literally when I do have a spare half an hour I can do it."

With thanks to Amy Plimmer, Elise James and Wendy Harrison

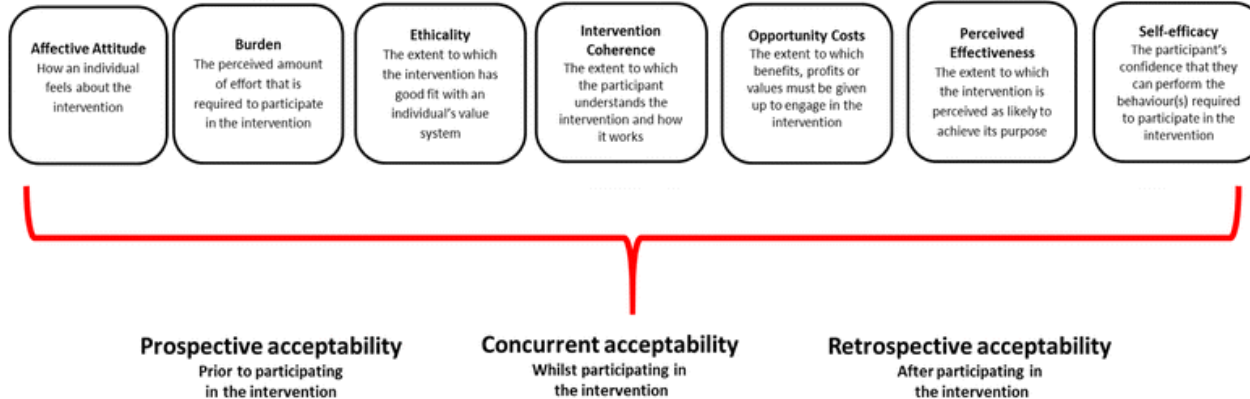
A growing appreciation of theoretical frameworks

Acceptability of hepatitis testing in community settings



Acceptability

A multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experiential cognitive and emotional responses to the intervention.



Sekhon, M., Cartwright, M. & Francis, J.J. Acceptability of healthcare interventions: an overview of reviews and development of a theoretical framework. *BMC Health Serv Res* **17**, 88 (2017). <https://doi.org/10.1186/s12913-017-2031-8>

With thanks to Ameze Simbo

Field epidemiology and behavioural science: Final reflections

Distinct but interconnected disciplines

Some 'cultural' differences to overcome: Different languages, 'quick and dirty' science ok in public health emergencies

Opportunity to work together to improve surveillance, deliver a better outbreak response and design and deliver culturally appropriate interventions

Field epidemiology and behavioural science

Thanks to: Paulina Kuczynska, Behavioural Science Specialist,
Health Protection Division