GenEpi-BioTrain – Training in genomic epidemiology for surveillance and outbreak investigations

Theresa Enkirch, ECDC (Microbiology and Molecular Surveillance Group)

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EU investments triggered by the pandemic

- 'HERA Incubator' (February 2021), a new EU bio-defence preparedness plan against SARS-CoV-2 variants
  - Rapid detection of SARS-CoV-2 variants

- On 25 February 2021, President Ursula von der Leyen announced that the EU would provide EUR 200 M to strengthen detection and monitoring of SARS-CoV-2 variants:
  - Whole genome sequencing (WGS)
    - short-term support for access to high-capacity WGS services
    - longer-term support for national investments into WGS infrastructure for the public health laboratories
    - cross-border networking activities such as bioinformatics, standardisations, and training

Overview of European Commission/ECDC* activities to boost genomic epidemiology

Access to high-capacity, rapid turn-around time WGS services

National WGS and RT-PCR infrastructure projects

National WGS and RT-PCR infrastructure projects (EU4Health)
Consolidation of national infrastructure (EU4Health)

Cross-border capacity-building support programme

2021 2022 2023 2024

*: Either implemented directly by ECDC, or implemented by HERA/HaDEA with ECDC technical input and support

Cross-border capacity-building support programme in genomic epidemiology

Framework contract:

"Training programme in genomic epidemiology and public health bioinformatics – GenEpi-BioTrain"

Aim:

Increase capacity to respond to Covid-19 pandemic

Increase capacity for genomic epidemiology for other diseases

- Value of the contract: ~5.2 Mio EUR for up to 48 months
- The programme started in January 2023

Consortium "GenEpi-BioTrain":

- Contract project managers are Rene Hendriksen, DTU (main) and Anders Rhod Larsen, SSI (deputy)
- Consortium includes DTU & SSI (DK), Institut Pasteur (FR), Research Center Borstel (DE), THL (FI), Karolinska (SE)

Cross-border capacity-building support programme

Objectives:

- Support countries in **building up their capacity** in genomic epidemiology and bioinformatics for public health
- Increase the **interdisciplinary collaboration** between bioinformaticians, epidemiologists and microbiologists
- Facilitate the **routine use of genomic information** for surveillance, preparedness and outbreak investigations

Training target groups:

- Professionals working in public health institutions **with** a background in computational biology/bioinformatics
- Professionals working in public health institutions who **do not** have a specific background in bioinformatics (i.e. microbiologists, epidemiologists, professionals in public health response and surveillance)

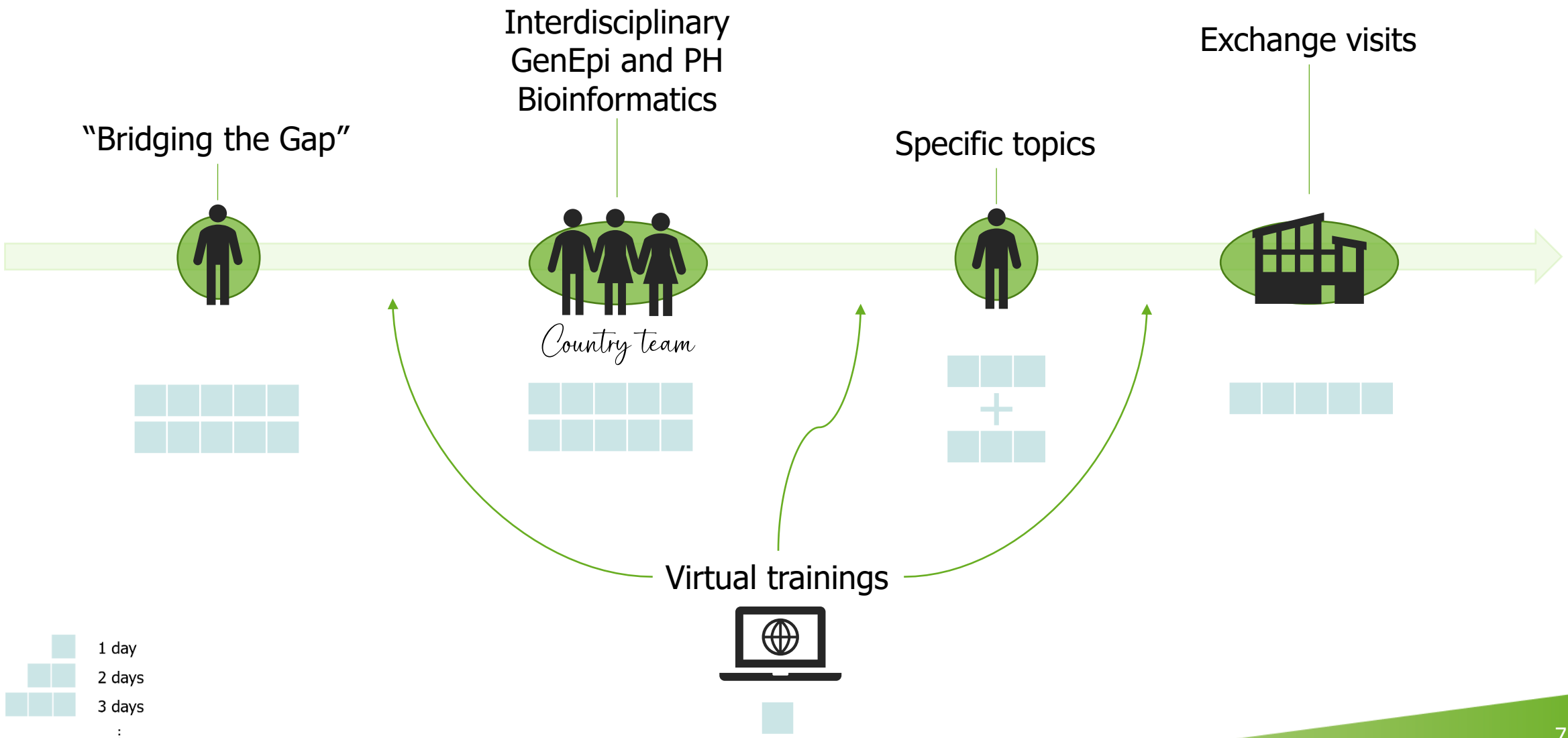
Training activities:

- Face-to-face workshops "Bridging the gaps in bioinformatics"
- Face-to-face workshops "Interdisciplinary genomic epidemiology and public health bioinformatics"
- Face-to-face trainings on specific topics in genomic epidemiology and/or public health bioinformatics
- Virtual information and training sessions, exchange visits for bioinformaticians

PATHOGEN WAVES AND TRAINING SITES

Year			Site
1	Respiratory viruses (SARS-CoV-2, influenza)	AMR (CCRE, MRSA and *C. difficile*)	DK
2	FWD (*Listeria, Salmonella*, STEC) *(TBC)*	VPI (*N. meningitidis, B. pertussis*) *(TBC)*	FR
3	Tuberculosis	*TBD*	DE
4	*TBD*	*TBD*	

EXAMPLE OF TRAINING ACTIVITIES PER WAVE

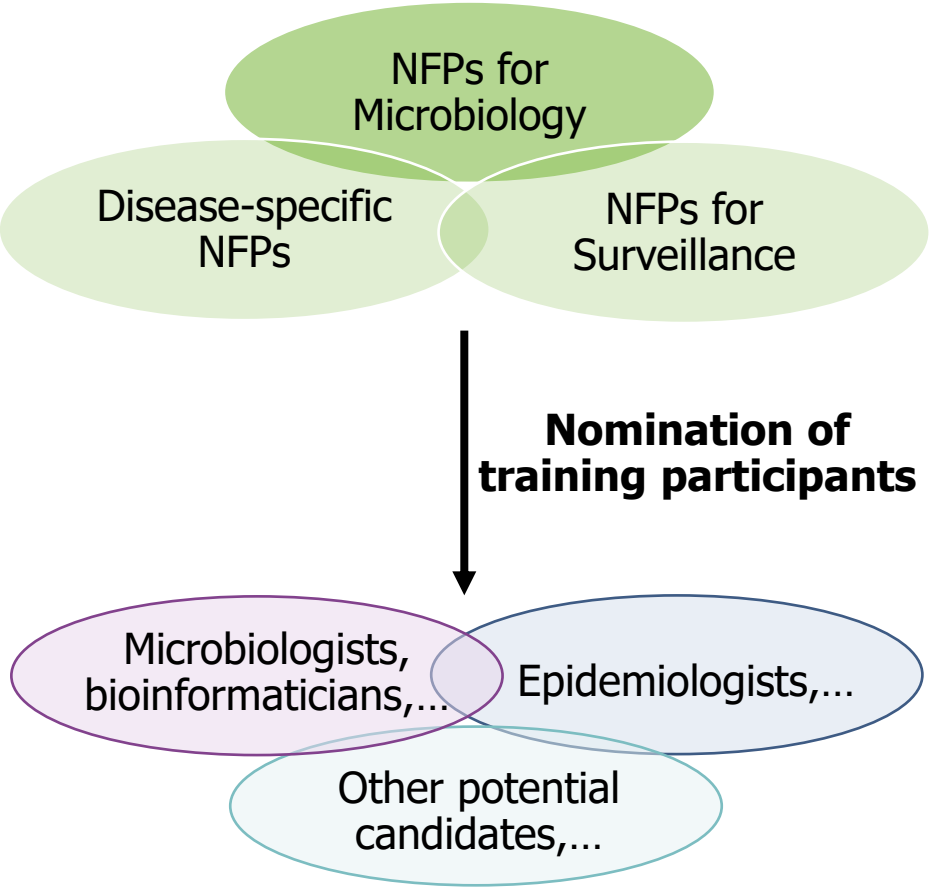


Nomination "blocks" per pathogen wave

	Block 1: • "Bridging the gaps" • Exchange visits • Specific topics	**Block 2:** • Interdisciplinary training ("Country teams")	**Block 3:** • Specific topics	**Block 4:** • Virtual training sessions	**Block 5:** • Exchange visits
Level:	BEGINNER LEVEL	BEGINNER/ ADVANCED LEVEL	BEGINNER/ ADVANCED LEVEL	BEGINNER/ ADVANCED LEVEL	BEGINNER/ ADVANCED LEVEL
Target group:	Bioinformaticians or "bioinformaticians-to-be"	Per country: 1 Bioinformatician 1 Microbiologist 1 Epidemiologist	Bioinformaticians, others (Microbiologists, epidemiologists,…)	Anyone who is interested	*TBD*
Further info:	Candidates should work/plan to work directly with public health sequencing-related activities	Bioinformaticians should have some experience; No bioinformatic experience needed for microbiologists or epidemiologists	Candidates should already have some experience in bioinformatics	*These activities will be announced separately*	*These activities will be announced separately*

Nomination of trainees per country

- Training participants should be nominated by the countries
- Coordination of the nomination process amongst the NFPs
- Suggestion: NFPs for Microbiology lead the coordination
- For each country, invitation letters will be sent to the NFPs (with other stakeholders in cc)
- Countries can nominate and rank up to three individuals per training block



Selection of trainees per country

- Nominees should be selected by the NFPs in an effort to ensure maximum impact of the training on the public health sector they serve, taking into consideration:
  - their projected period of implementation of skills at the institute
  - possibilities of cascading training nationally
  - direct use of the acquired skills
- Nominees must currently be employed in the public health sector in one of the EU/EEA countries
- ECDC will review applications and select candidates based on
  - professional background
  - training needs
  - maximum impact
  - course availability

INFORMATION SHARING ACTIVITIES

- Each year, ECDC will send out an information letter for the upcoming pathogen waves
- Each year, virtual meeting with ECDC national contact points

(**next information letter for wave 3 & 4 including virtual meeting planned in autumn 2023**)

- After this meeting, ECDC accepts nominations for trainees
- Each year, virtual information sessions with the appointed trainees
- Quarterly newsletter (1st newsletter sent in April/May 2023)
- **For wave 1 & 2: ~300 nominations received from 27 countries!**

Thanks!

Questions?

If you have any further questions please contact us!

ECDC.Microbiology@ecdc.europa.eu