ABOUT THE CONSORTIUM

○ Belgium is not part of a consortium

○ Coordinated by the National Public Health Institute (**Sciensano**)

Workpackages (WP)	WP coordinator(s) within Sciensano
WP1: Project management and coordination	Heleen Masset
WP2: Communication and Dissemination	Amber Van Laer
WP3: Evaluation	Amber Van Laer
WP4: Sustainability	Heleen Masset
WP5: Extention of the infrastructure to other participants	Florian Commans
WP6: Enhancement of the base functionalities	Giulia Leonetti Eric Mairiaux
WP7: Central BioIT and NRC Platform	Kevin Vanneste
WP8: Quality	Sigrid De Keersmaecker
WP9: Data Governance	Heleen Masset

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PROJECT'S MAIN OBJECTIVES AND EXPECTED IMPACT

MAIN OBJECTIVES:

○ Building an **overarching national public health information infrastructure** for WGS- and other laboratory and epidemiological results, data exchange, *etc.* in order to **strengthen the surveillance and public health response**.

○ Improving the reporting of genomic results to allow **integrated genomic–epidemiological analysis**

    ○ Epidemiological links between pathogen–patient–source, e.g. Salmonella infections linked to contaminated food source
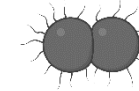
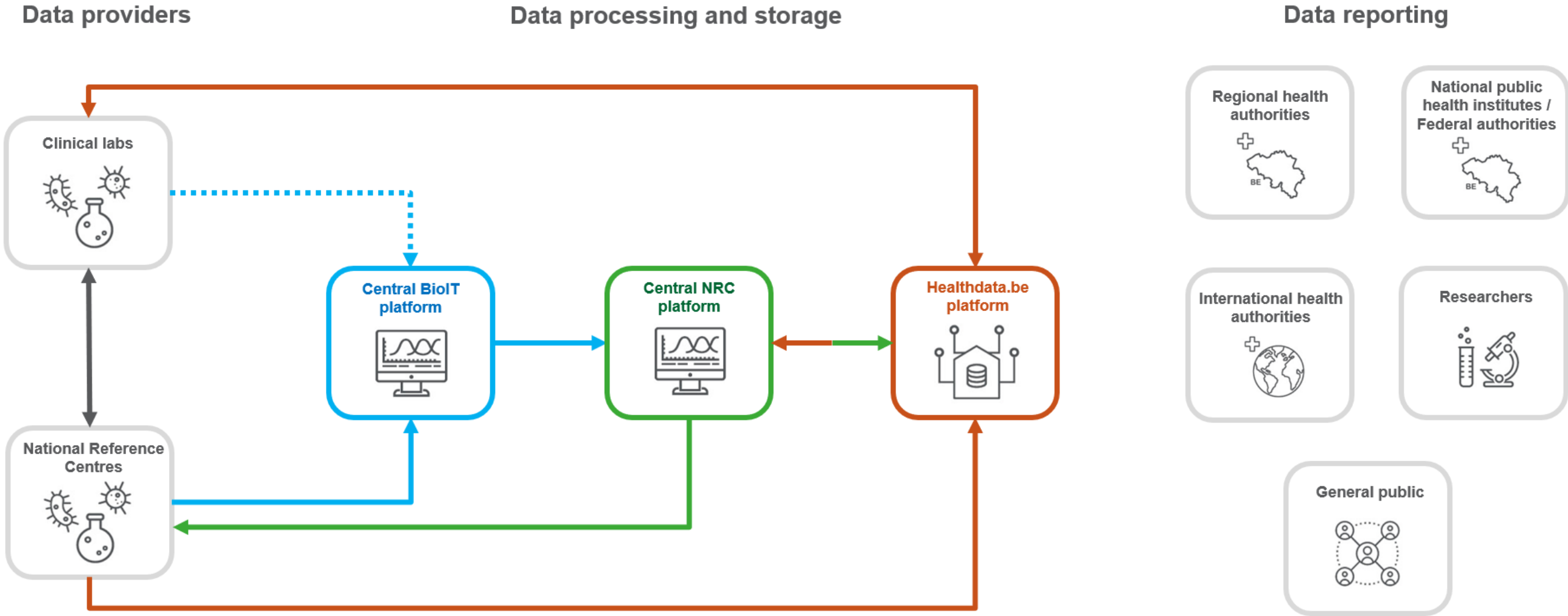SARS-CoV-2   Influenza   Salmonella   Tuberculosis   Listeria   Neisseria

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PROJECT'S DATAFLOW

HERA
#HealthUnion

○ HERA-BE-WGS project makes use of the overarching **be.Prepared architecture** (Belgian Preparedness Architecture for Infectious Diseases)

Data providers

Data processing and storage

Data reporting

Clinical labs

National Reference Centres

Central BioIT platform

Central NRC platform

Healthdata.be platform

Regional health authorities

National public health institutes / Federal authorities

International health authorities

Researchers

General public

Legend data flows: — Out of scope — Genomic data — Clinical/epidemiological data — Combined genomic and clinical/epidemiological data

PROJECT'S MAIN OBJECTIVES AND EXPECTED IMPACT

HERA
#HealthUnion

IMPACT:

- Identifying the **key target groups** via **stakeholder analysis**
  - National Reference Centres for human microbiology (NRC)
  - Clinical microbiology laboratories
  - Epidemiologists
  - Regional/National health authorities
  - ECDC/WHO
  - HERA/Other HERA initiatives
  - General public

Conclusion: The key target groups benefit from this project through the **combined genomic-epidemiological surveillance** of infectious diseases, i.e. timely, better outbreak detection, investigation and management, as well as **facilitating** data reporting at a national and international level.

Short-term	Medium-term	Long-term
Central data collection and processing of genomic, clinical and epidemiological data in national, secured public health information system	Data sharing and reporting on a regional, national and international level	Contribution to overall preparedness and improved response in case of outbreaks or pandemic

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PROJECT'S BEST PRACTICES THAT CAN BE SHARED

○ Project is transversal within Sciensano: diverse team with a **broad range of expertise**

○ Setting up the be.Prepared architecture that includes three **different components**
- ○ Central BioIT platform: Cloud-based, fully automated >> Using state-of-the-art pathogen-specific bioinformatics pipelines
- ○ Central NRC platform: Centralised place where clinical/epidemiological data and genomic indicators are aggregated together >> User-friendly interface based on BIGSdb to support NRC scientists in pathogen surveillance
- ○ Healthdata.be platform: Pseudonymized and centralized data management and analysis platform >> Clinical/Epidemiological data combined with genomic indicator data

○ Obtain interoperability by using **international, standardized terminology** (e.g. SNOMED-CT and LOINC) and the internal LIMS compatibility

Central BioIT platform

Central NRC platform

Healthdata.be platform

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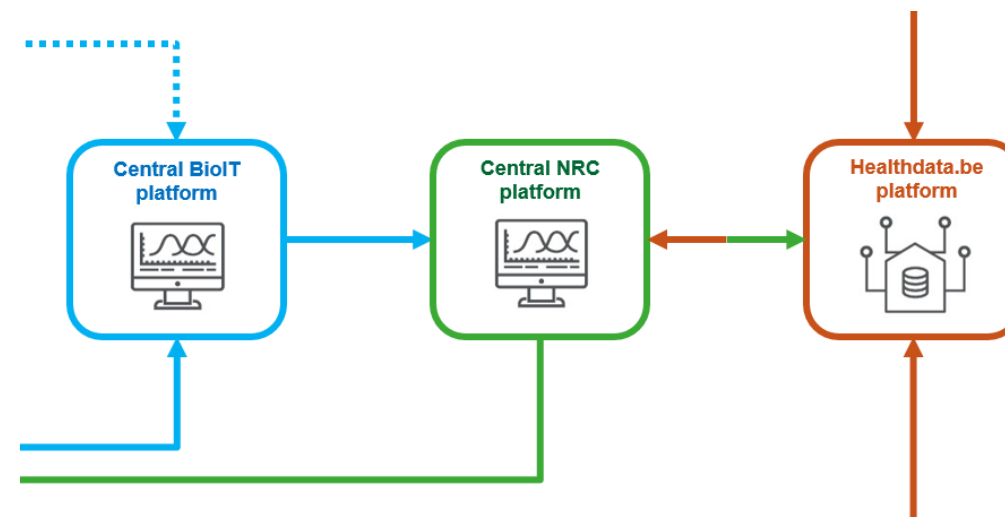
PROJECT'S LESSONS LEARNED IN THE FIRST YEAR

○ It takes **time** to further **develop and maintain a durable infrastructure** for WGS (1 year is definitely too short)

○ **Flexibility** is necessary
   ○ Loss of key personnel
   ○ Technical delays

○ **Communication** is key on different levels
   ○ Within the team to align
   ○ With potential (external) partners

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ADDED VALUE

- **Unique** national preparedness architecture that uses existing components (cfr. COVID-19) and combines them with new data flows
  - Clinical/Epidemiological and microbial genomic data can be **linked and analysed** together
  - **Harmonized and automated** bioinformatics pipelines available

- Allows day-to-day use to **strengthen surveillance and outbreak investigation** and can **scale quickly** when needed

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be.Prepared
#HERABEWGS

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THANK YOU FOR YOUR ATTENTION!

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WE WANT TO THANK ALL THE MEMBERS OF THE HERA–BE–WGS INITIATIVE FOR THEIR UNWAVERING COMMITMENT TO THIS PROJECT.

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