



REPUBLIC OF ESTONIA
HEALTH BOARD

Data linkage and flow: Influenza-SARS-CoV-2

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Before Pandemic: Influenza Surveillance



* National Communicable Diseases (CD) mandatory reporting system:

- * 800 **physicians** report the weekly number of patients seen with *influenza-like illness (ILI)* or *acute respiratory infection (ARI)* or both to the Health Board (**Department of Communicable Diseases**) through *national information system for reporting of infectious diseases and laboratory data (NAKIS)*
- * All **laboratories** report to the **Health Board** through *national information system for reporting of infectious diseases and laboratory data (NAKIS)* weekly number of **PCR positive tests of FluA/B, RSV, parainfluenza, adenovirus, hMPV, rhinovirus, enterovirus, bocavirus, coronavirus**

* General Practitioners (GP) Sentinel Network

- * 88 **GP-s** weekly report number of patients with **ILI** to **National Influenza Centre** (Health Board, Department of Communicable Diseases), the system covers 10,5% of the population
- * A **subset** of specimens from sentinel ILI and ARI patients are **tested for FluA, FluB, RSV, parainfluenza, hMPV, adenovirus and rhinovirus** (multiplex real-time RT-PCR) at the Health Board laboratory (Laboratory of Communicable Diseases). And the FluA and FluB positive samples are further subtyped (real-time RT-PCR).
- * **Weakness of the data flow: double reporting of GP-s and laboratories, time consuming process**



During COVID-19 Pandemic



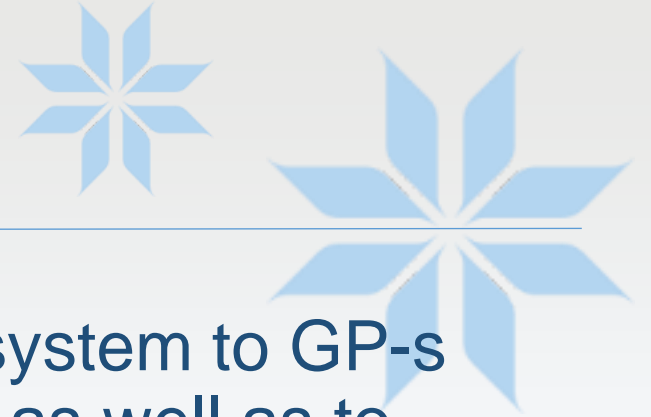
- * Sentinel surveillance system was interrupted; GP-s were overloaded
- * **It was necessary to develop new aim-oriented system for testing and reporting:**

It needed to be secured that people with COVID-19 symptoms are tested within 24 hours and were notified of the test result no later than 24 hours after the test result was given

- * **Solution:** the system which allowed GP-s to make requests and receive results of the analyses digitally within 24 hours was worked out through the MEDIPOST software (Medisoft). GP center was able to send a patient to the testing center for PCR test.
- * The testing center was also able to contact the patient and inform about the time and place of sampling



During Pandemic (cont.)



- *Results needed to be transmitted through E-Health system to GP-s and *patient's digital clinical records* during 24 hours as well as to CD registry.
 - ***Solution:** *laboratory information system TALIS* was developed and connected to the *patient's digital clinical records - E-health (TIS)* for the direct result transmitting
 - *Positive and negative results were reported to the Department of Communicable Diseases of Health Board through TALIS
- *Since January 2022 the same system was enlarged for **Influnza** and **RSV**



Ongoing: Sentinel Integrated System



- * A comprehensive sentinel system which collects data from all regions of Estonia is established (covers ~10% of the population)
- * Specimens from patients with **ILI** and **ARI** are tested for Influenza virus A/B and further subtyping (real-time RT- PCR), SARS-CoV-2, RSV, parainfluenza, hMPV, adenovirus, rhinovirus
- * **In process:**
 - * Specimens from sentinel sites will be additionally **sequenced for SARS-CoV-2 variants**
 - * To achieve faster and more convenient reporting mechanisms of positive/negative results of sentinel samples *the laboratory information system TALIS is being improved* as well as MEDIPOST system is being integrated now for sentinel providers





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Thank you!

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