



Norwegian Institute of Public Health

Experiences from national registry-based virological surveillance, Norway

As seen from the reference laboratory

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Joint ECDC/WHO EURO European Influenza and COVID-19 Surveillance Meeting 2022

5 October 2022

Before: Comprehensive, aggregated weekly national flu testing data, by old WHO age groups

Comprehensive for influenza for several decades

- Testing denominators since 1999
- By fax or email, all digital by 2020, but manual process
- Compliance could vary
- Message based reporting served also as a nice weekly «hello» between sender and us
- Additional reference lab test results needed to be compensated by subtracting from aggregate data

WHO NASJONALT INFLUENSASENTER, FOLKEHELSEINSTITUTTET
Lab 18

Postes hver fredag i termiddag til Olav Hungnes, Nasjonalt Folkehelseinstitutt, Divisjon for smittevern, Boks 4404 Nydalen, 0403 Oslo

ELLER Sendes som e-postvedlegg senest mandag til olav.hungnes@fhi.no evt Telefaks 2107 6447 (NBI nytt nummer!)

18

Mikrobiologisk avdeling Nordlandssykehuset Prinsensgt. 164 8092 Bodø

UKERAPPORT - INFLUENZA - VINTEREN 2008/2009

For uke nr.: 6 J.o.m. fredag: 17/2

a) intet å melde
 b) som nedenfor (sett X ved det som passes)

Alder/fødselsår	ANTALL POSITIVE DIAGNOSER:										ANTALL US.*					
	INFLUENZA A					INFLUENZA B					SUM B	Serol. B	Dyrk.	Agents		
Serologi Stig. ¹ Høy ²	A ikke subtypet Dyrk. AG ³ NA ⁴		A(H1N1) Dyrk. AG ³ NA ⁴		A(H3N2) Dyrk. AG ³ NA ⁴		SUM A		Serologi Stig. ¹ Høy ²					Dyrk. AG ³ NA ⁴		AG ³
0-4 år															14	32
2004-2008 ⁶													10		2	2
5-14 år													12		4	2
1994-2003 ⁶													40		4	8
15-24 år													8		4	
1984-93 ⁶																
25-59 år					2											
1949-83 ⁶																
≥ 60 år																
≤ 1948 ⁶																
oppgitt																
SUM ⁽⁵⁾													70		28	44

Opplysninger om utbrudd av influensa på skoler, institusjoner osv., spesielle enkelttilfeller og annet av interesse:

Utlagt av: Ståle A. Hestmark

Date: 02-09

4. Nukleinsyrepåvisning (RT-PCR, NASBA etc.)
5. Antall undersøkte prøver pr.kategori
6. Årstall gyldig f.o.m. januar 2008, trakk evt. fra ett år for prøver tatt før nyttår

1. Antall med omslag i serumpar fra neg. til pos. eller > 4X tilstigning
2. Registrering basert på høy titer i enkeltprøve godtas ikke for det er påvist influensa av vedt. type ved agenspåvisning eller serokonversjon/tilstigning; orientering vil bli gitt på WHO skjema
3. Antigenpåvisning f.eks. IF, lurrigtest

Uke-rii-0809-labmelding.xls

Other virus diagnoses were also collected

- The NIPH Department of Virology also collected monthly data on all other virology diagnoses in Norway, but this was terminated in 2018 after many decades of operation
 - No test denominator, not age stratified, not very timely
- A new, comprehensive national microbiology lab database had been planned for several years.

The Covid-19 emergency and a flying start

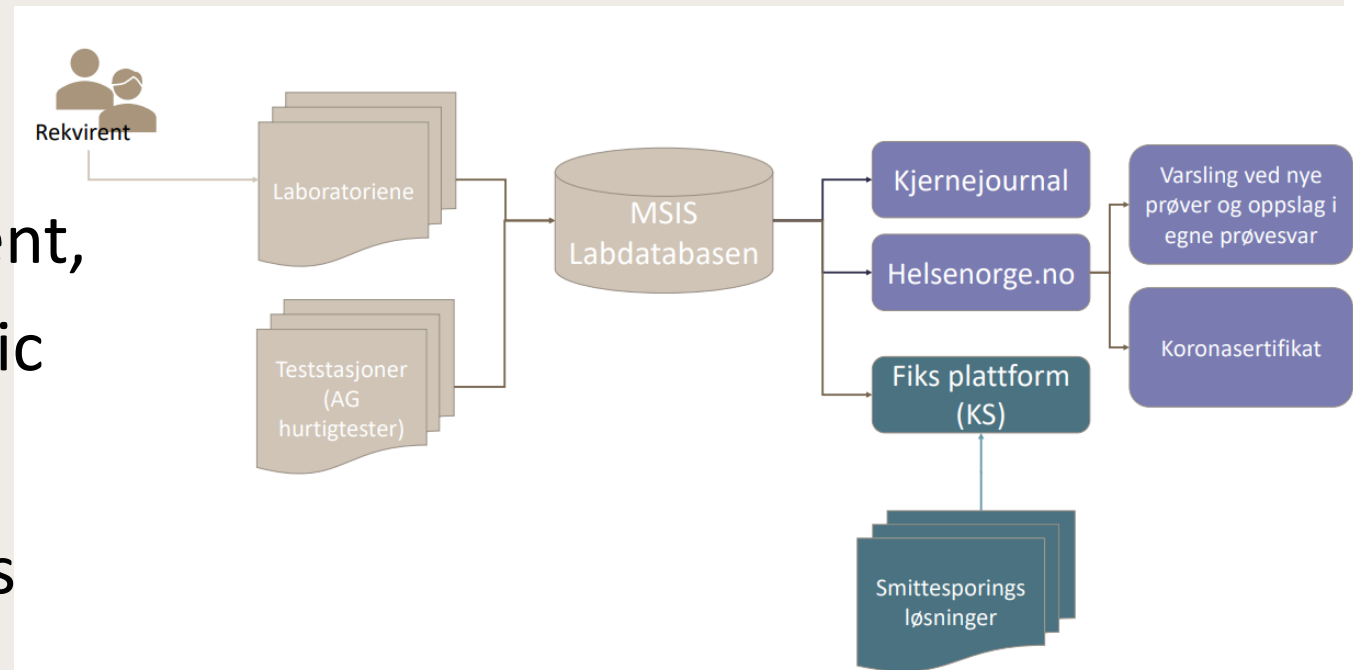
- A down-scaled version of the planned database was rushed into place with the emergence of Covid-19 in early 2020

A heroic effort by NIPH and the laboratories!

- At the same time, Covid case notification took place in the ordinary MSIS Registry; while the reference lab assisted with collecting aggregated Covid test denominators via the existing influenza lab collaboration, until the new lab database could take over later in the spring.
- Later in 2020, the database also took over for the weekly influenza reporting from the labs

All relevant medical microbiology test results in real-time

- A copy of every test result goes to the database in real-time
- Output to many purposes: for patient, health care, local and national public health surveillance and response
- The reference laboratory has access to some pseudonymised and some identifiable data views (e.g. sentinel data)
- This gives us a highly detailed, real-time, data flow; where results from primary and reference lab can be joined on the actual case



Graphics by Labdatabasen staff & developers

Also SARS-CoV-2 variant data

Variant PCR and sequencing results

- Database conveys variant data to and from reference lab; may assist in prioritising for sequencing, virus isolation etc.
- When we sequence a virus already typed by variant PCR in the primary lab, the WGS result will confirm, extend or correct the initial variant PCR result
- Database variant data is harmonised and translated for reporting to TESSy
 - Through a BIG interpretation and harmonisation effort by database and rellab
- Database carries all sentinel metadata from external laboratory partner to reference lab

Experiences from national registry-based virological surveillance

Conclusions

- The implementation of the long-awaited lab database was forced ahead by the emergence of the covid-19 pandemic
- The database successfully joins data from a very diverse laboratory ecosystem in the country
- It adds great functionality, speed, detail and compliance; while taking away reporting lab workload
- It has empowered the work for the reference laboratory significantly.
-but there have been several rounds of discussions on our level of access
- Further evolution of the database is highly desirable
- In a post(?)-covid austerity situation, the sustainability and continued improvement must be fought for.
- A HUGE thank you to all those who made the MSIS Laboratory Database happen!!

The MSIS Laboratory Database received the Norwegian Digitalization Prize for 2021



Supplementary slide after this

