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Validation of the Swedish National Vaccination Register

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Responsibility for vaccination in Sweden

- Public Health Agency of Sweden

- Develops national vaccination programs
- Issues recommendations and guidelines to healthcare providers
- Evaluates effectiveness, safety, and public health impact
- Advises the government on policy decisions

- Health Care Regions (21)

- Responsible for the actual healthcare delivery
- Organize and run vaccination services (clinics, schools, primary care)
- Ensure people are offered vaccines
- Handle logistics (appointments, staffing local prioritization)
- Responsible for reporting



National Vaccination Register

- The NVR is regulated by the Swedish Act on National Vaccination Registers (2012:453) and is governed by the Public Health Agency
- When introducing new vaccines in programs, the current government makes the formal decision
- The NVR includes vaccinations for
 - the childhood immunization program
 - COVID-19 vaccination
 - risk group vaccinations;
 - pneumococcal vaccination for risk groups and elderly > 65 years of age,
 - BCG for populations originating from high-endemic countries

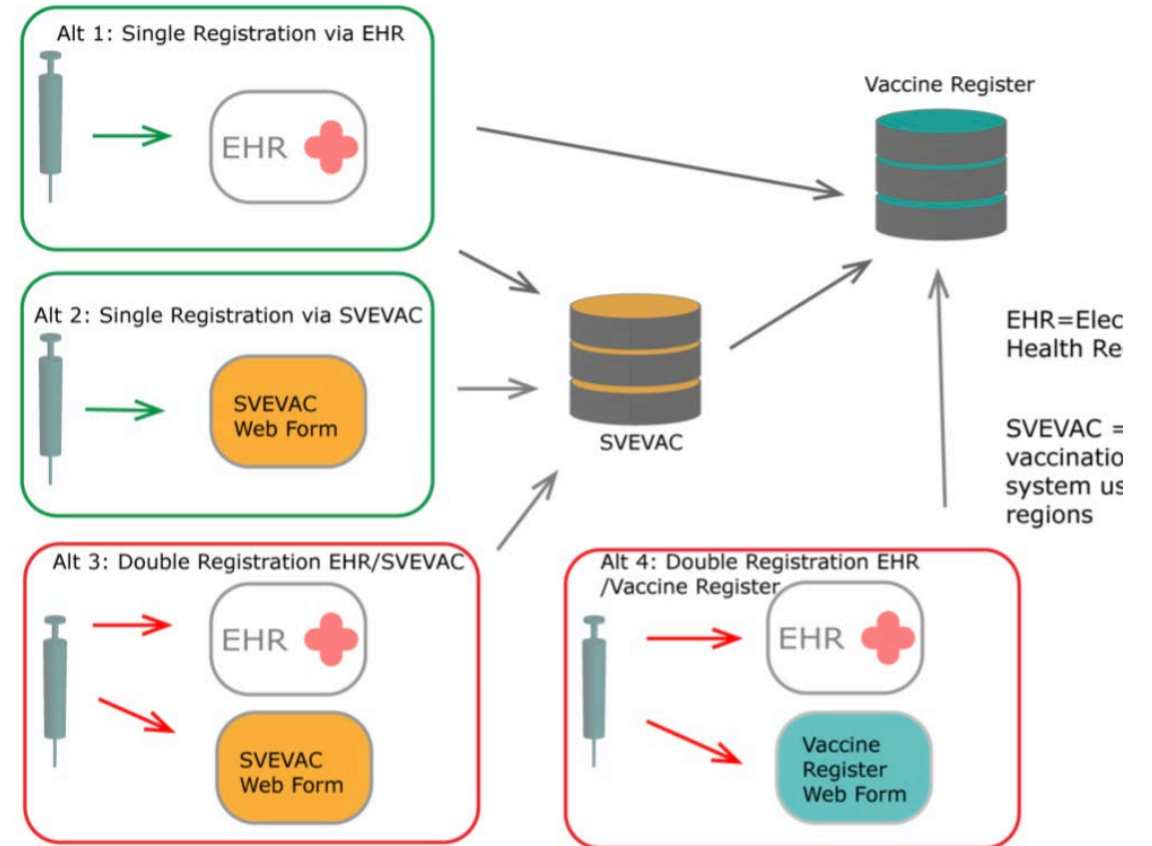
NVR for childhood immunisations

- Since the start in 2013, NVR simplifies data collection at the national level and enables:
 - ✓ monitoring of vaccination coverage,
 - ✓ monitoring of effectiveness and safety,
 - ✓ research and epidemiological studies
- Data to be reported
 - ✓ Unique personal ID from the Population Register (allows for data linkage to other registers)
 - ✓ Date for vaccination
 - ✓ Vaccine with batch number
 - ✓ Provider (well-baby clinics (WBC), schools, GPs, vaccination services etc)
 - ✓ *Dose number (for Covid only)*



Validation of NVR 2014-15

- Historically, Sweden has demonstrated high coverage for most childhood vaccines through administrative data
- In 2013, NVR replaced manual reporting from WBCs and schools
- In reality, several systems were used for reporting by
 - ✓ the different regions
 - ✓ by public and private health care providers (HCP)



Registration methods used 2013-2017 for reporting to NVR

Results of the validation

- Evaluation of two birth cohorts 2014-2015, where 98% had one or more registered vaccinations in NVR
- Vaccine coverage in NVR at 2 years of age
 - > 3 DTP doses 85,8% vs 97,5% for admin data
 - 1 dose MMR 87,1% vs 97,4% for admin data
- Underreporting in NVR may occur for
 - Recent immigrants or illegal immigrant children lacking personal ID number
 - Vaccines received abroad
 - Small providers lacking automatic transfer of information
 - Families with many relocations

Table 2

Vaccination status in Vaccination Register at 24 months of age per Health care provider (HCP) and registration method.

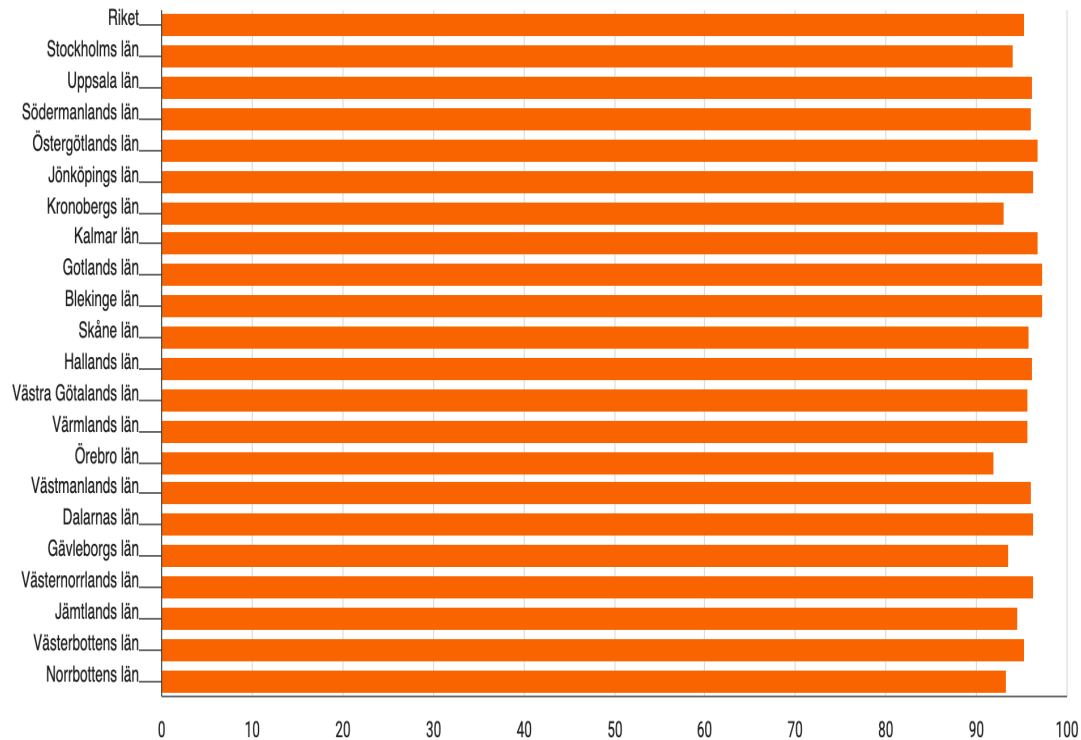
HCP	n started vaccination programmes	≥3 doses DTP + IPV ²	≥3 doses HepB ²	≥3 doses PCV ²	≥1 dose MMR ²
Publicly owned HCP:s	158,626	89,49%	73,68%	88,98%	93,13%
Stockholms läns landsting	29 065	90,76%	90,57%	89,84%	92,53%
Västra Götalandsregionen	26 749	89,82%	54,94%	88,47%	91,10%
Region Skåne	20 111	89,02%	66,51%	88,75%	94,26%
Region Östergötland	8365	83,86%	53,26%	83,60%	93,32%
Region Uppsala	5652	89,40%	47,05%	88,15%	91,49%
Region Jönköpings län	8190	95,76%	94,37%	95,63%	98,19%
Region Halland	4180	90,48%	32,68%	89,95%	92,27%
Region Örebro län	6675	90,64%	89,93%	89,35%	96,28%
Landstinget Sörmland	5241	81,57%	81,28%	81,66%	87,92%
Landstinget Dalarna	5350	80,75%	73,25%	80,50%	89,57%
Region Västmanland	2756	77,76%	38,57%	77,10%	92,09%
Region Gävleborg	4200	93,88%	81,55%	94,21%	96,33%
Västerbottens läns landsting	4689	89,25%	88,29%	90,53%	94,22%
Landstinget i Värmland	5025	97,09%	95,34%	96,94%	98,11%
Region Norrbotten	4295	92,46%	92,04%	92,32%	91,71%
Landstinget Västernorrland	3454	94,50%	94,24%	94,18%	93,66%
Landstinget i Kalmar län	4867	96,90%	95,11%	96,79%	97,60%
Region Kronoberg	3823	89,17%	88,70%	91,92%	91,73%
Landstinget Blekinge	2518	83,48%	60,17%	83,32%	92,69%
Region Jämtland Härjedalen	2415	77,27%	69,32%	76,73%	88,41%
Region Gotland	1006	82,50%	25,94%	80,52%	96,42%
Very large private HCP:s	28 458	87,14%	70,67%	86,75%	93,47%
Capio ¹	14 370	91,43%	72,44%	86,39%	92,95%
Praktikertjänst AB	14 088	87,49%	68,86%	87,12%	93,99%
Private HCP:s with 10–2532 started programmes (147 HCP:s)	38 854	82,86%	72,23%	82,50%	91,23%

¹ Includes HCP:s Capio Närsjukvård AB, Capio Primärvård AB, Capio Läkarhus AB and Capio Sjukvård AB.

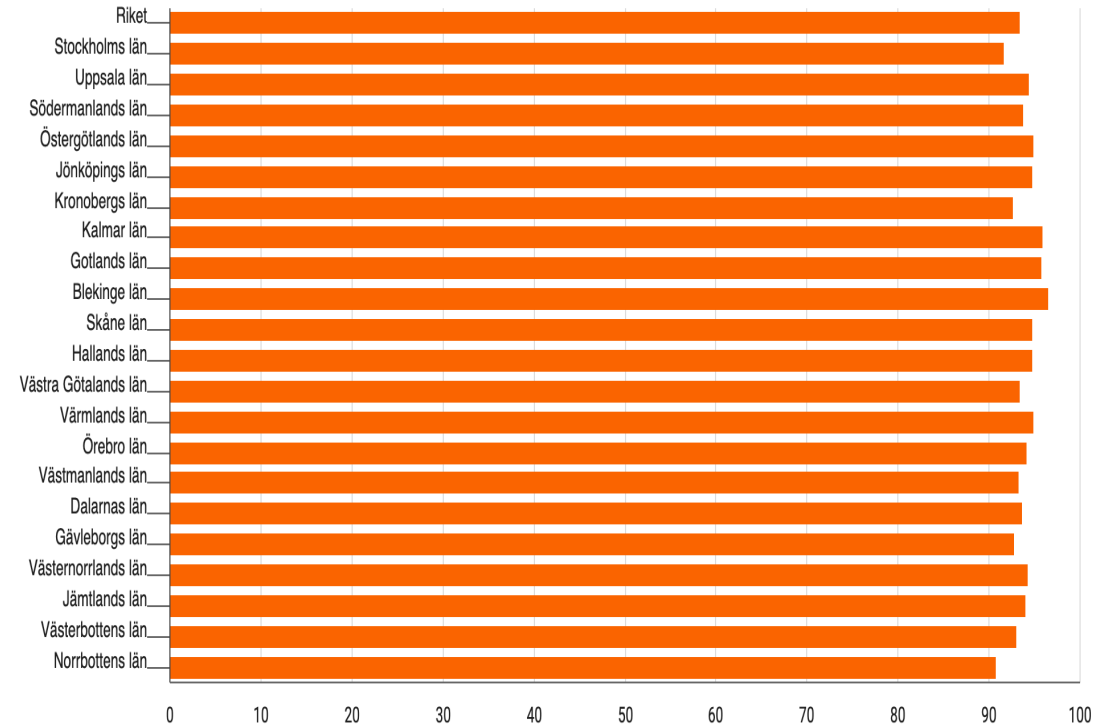
² Percentage of started DTP-programmes.

NVR today

In 2025, 98% of vaccinations were automatically reported to NVR



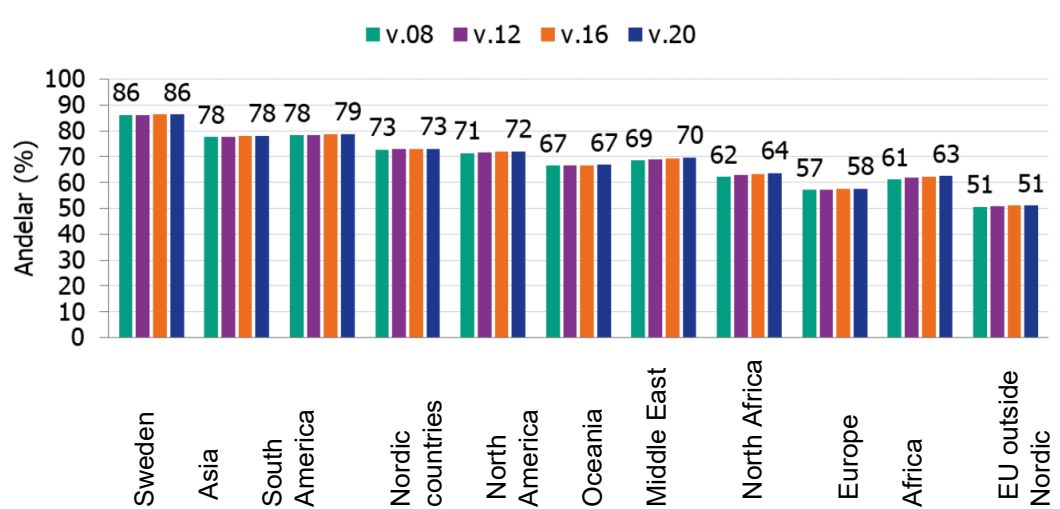
At 2 years of age; DTP 95,2%



MMR 93,4%

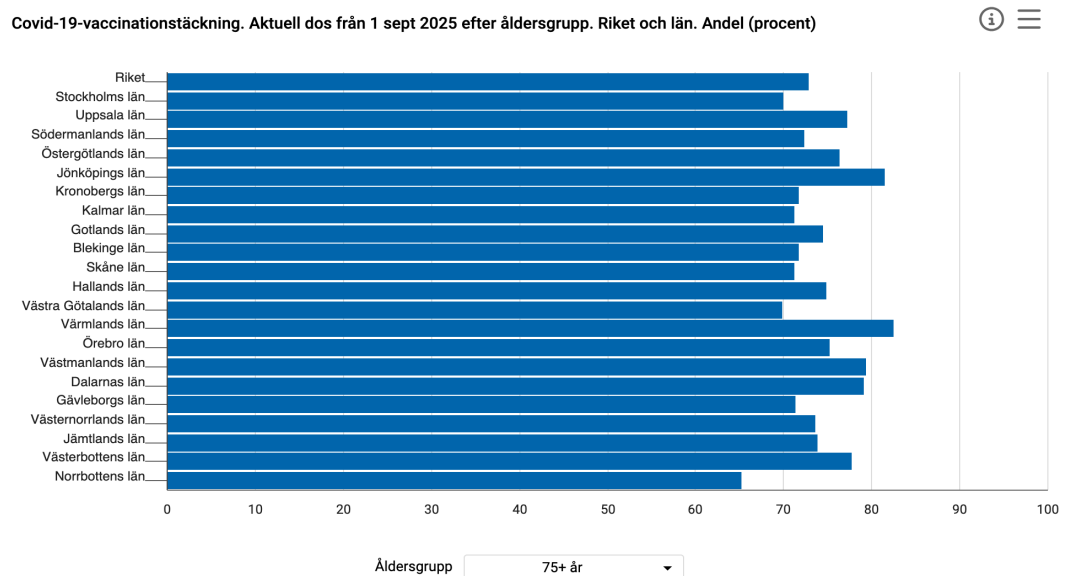
Covid-19 vaccination in NVR from 2021

Vaccine uptake during w 8-20 in 2022



- In the pandemic; regular public updates on vaccine up-take in parallel with disease monitoring
- Data for targeted interventions to age groups, populations, risk groups etc

Covid-19-vaccinationstäckning. Aktuell dos från 1 sept 2025 efter åldersgrupp. Riket och län. Andel (procent)



- In 2025/26, reports on vaccine coverage in risk populations +75 yrs of age

Covid-19 vaccination in NVR

Short communication

Differences by region of birth in SARS-CoV-2 vaccine coverage and positive SARS-CoV-2 test among 400 000 healthcare workers and the general population in Sweden

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JAMA Cardiology | **Original Investigation**

SARS-CoV-2 Vaccination and Myocarditis in a Nordic Cohort Study of 23 Million Residents

Øystein Karlstad, MScPharm, PhD; Petteri Hovi, MD, PhD; Anders Husby, MD, PhD; Tommi Härkänen, PhD; Randi Marie Selmer, MSc, PhD; Nicklas Pihlström, MSc; Jørgen Vinslöv Hansen, MSc, PhD; Hanna Nohynek, MD, PhD; Nina Gunnes, MSc, PhD; Anders Sundström, BA, PhD; Jan Wohlfahrt, MSc, DMSc; Rickard Ljung, MD, PhD, MP

Spontaneous Reports of Adverse Reactions with Fatal Outcomes After COVID-19 Vaccination During the National Vaccination Campaign in Sweden

Marja-Leena Nurminen¹  · Per Lindemo¹  · Anders Sundström^{2,3}  · Björn Zethelius^{1,4}  · Maria Larsson¹  · Sofia Attelind^{1,5}  · Nicklas Pihlström¹  · Rickard Ljung^{1,6}  · Veronica Arthurson¹ 

What's not in the NVR?

- Travel vaccines
- Tick-borne encephalitis virus vaccines, now offered by some regions
- Herpes zoster vaccination (for adults)

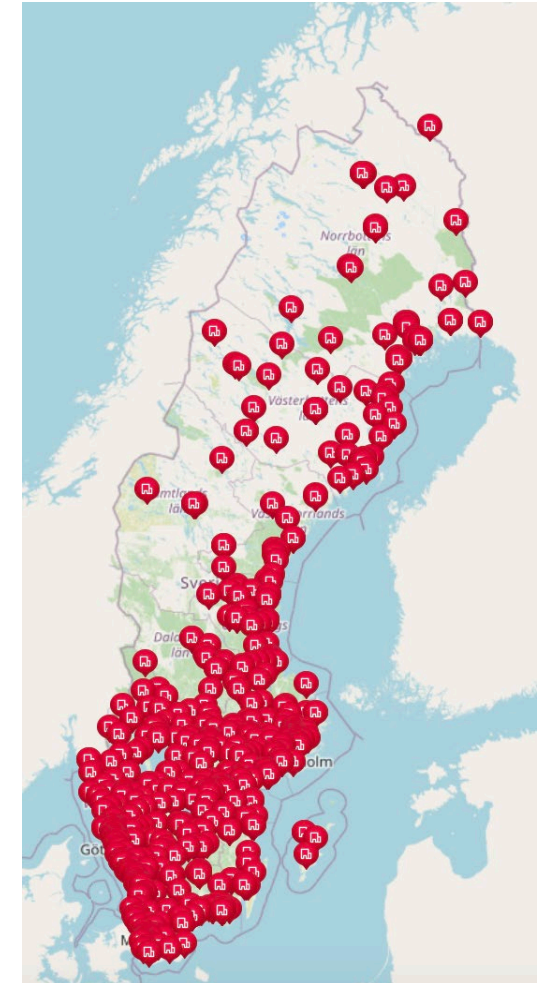
- Possibility to follow safety data for new vaccines
- Vaccination during pregnancy
- RSV Mab to infants (from autumn 2025)

- Information to the individual

MittVaccin-a tool for everyone

- A national digital vaccination platform for public and private use, owned by Cambio Healthcare Systems
- Core functions for booking ,documentation, reminders
- Linked to regional healthcare IT and private vaccination providers, currently active in 13/21 regions
- Routine immunisations, travel vaccines, seasonal vaccines
- Accessible for the individual

<https://www.cambiogroup.com/our-solutions/cambio-mittvaccin-journal-emr/>



What lessons can be learnt for other EU countries?

- Implementation is an on-going and time-consuming process
- Data is available for research
- Many stakeholders (government, regions, private/public HCPs) complicate the decision process

Acknowledgement

- Collaborators at the Public Health Agency
- Expertpanel on vaccination, Region Stockholm
- The Swedish Pediatric Society, Working group for vaccination

