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# Coronavirus immunisation abroad among foreign-born persons in Norway

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## SHORT REPORT

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## **BACKGROUND**

The Norwegian Institute of Public Health's statistics on immunisation against SARS-CoV-2 show that vaccination coverage for foreign-born persons living in Norway is lower than for persons born in Norway. As of January 2022, the difference was 18 percentage points (76 % versus 94 %). This difference is likely to be due to several factors, one of which may be that many of those who were immunised abroad have not had this registered in the Norwegian Immunisation Registry.

## **MATERIAL AND METHOD**

In November 2021, the Norwegian Institute of Public Health conducted a public health survey in the county of Viken. Respondents were asked if they had been vaccinated against the coronavirus, if they were vaccinated in Norway or abroad, and if immunisation abroad had been reported to the Norwegian health service. They were also asked to specify their country of birth. The sample was drawn from the National Population Register. The survey was conducted online and the response rate was 41 % ( $n = 108\,738$ ).

## **RESULTS**

A total of 105 010 (97 %) of the respondents had had at least one dose of the coronavirus vaccine. Of these, 724 (<1 %) had only been vaccinated abroad. This applied to 392 (3 %) of the 13 286 foreign-born persons, 203 (52 %) of whom had reported their immunisation to the Norwegian health service.

## **INTERPRETATION**

In this dataset, unregistered immunisation abroad explains only a small proportion of the difference in vaccination coverage between Norwegian-born and foreign-born persons.

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## **Main findings**

In the public health survey conducted in Viken in November 2021, 97 % of the respondents stated that they had been vaccinated against the coronavirus.

Less than 1 % were only vaccinated abroad.

Among foreign-born persons, 3 % were only vaccinated abroad.

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Vaccination against SARS-CoV-2 (the coronavirus vaccine) is offered through the Norwegian coronavirus immunisation programme. The objectives of the programme include reducing the risk of serious illness and death. The highest possible vaccine coverage in the population is therefore desirable [\(1\)](#).

Statistics from the Norwegian Institute of Public Health show that vaccination coverage among the foreign-born population is lower than among their Norwegian-born counterparts. In January 2022, it was reported that 94 % of the Norwegian-born population over the age of 18 had been immunised with at least one dose of the coronavirus vaccine [\(2\)](#). For foreign-born persons, the corresponding figure was 76 %, and this proportion varied considerably between different countries of birth [\(3\)](#). The Norwegian Institute of Public Health and voluntary organisations have pointed out that the low registered vaccination coverage among foreign-born persons may be due to this group being vaccinated in their home country without it being registered in the Norwegian Immunisation Registry (SYSVAK) [\(3, 4\)](#). This is likely to particularly apply to persons from countries that have good access to vaccines and are geographically close to Norway, and in cases where there is extensive travel between the two countries. For example, it may apply to people from Eastern Europe, who make up some of the largest immigrant groups in Norway. Among persons born in Poland, Lithuania and Latvia, the registered proportion that is immunised with the first dose of the coronavirus vaccine (as of 9 January 2022) was 47 %, 50 % and 49 % respectively [\(2\)](#). The differences in vaccination coverage are somewhat smaller when adjusted for age, gender, socio-economic status and length of residence [\(3\)](#).

Coronavirus vaccines given abroad can be registered in SYSVAK via the health service and will thus appear in the vaccine statistics, but the extent to which this is known among the population or has been done is uncertain [\(5\)](#). The question is therefore whether coronavirus vaccines that foreign-born persons have received in their homeland, and which are not registered in SYSVAK, can explain part of the discrepancy in vaccination coverage between the Norwegian-born and foreign-born populations.

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## Material and method

The county public health surveys are conducted by the Norwegian Institute of Public Health in collaboration with the individual county authorities [\(6\)](#). The surveys are sanctioned in section 7 of the regulations on overviews of public health. During the pandemic, the Norwegian Institute of Public Health conducted several such surveys to examine attitudes to vaccination [\(7\)](#). The dataset is based on the public health survey from Viken, which was conducted in the period 8–26 November 2021 [\(8\)](#).

The online survey was conducted among persons  $\geq 18$  years of age registered as resident in the county of Viken. The sample was randomly drawn from the National Population Register, and contact details were obtained from the Common Contact Register. Invitations were sent by email and text message. Respondents logged in to the questionnaire using the BankID system. Of 265 684 persons invited to participate, 108 738 (41 %) responded.

Respondents were asked if they, or one or both of their parents, were born abroad. Respondents who answered 'no' were coded as born in Norway. Those who answered 'yes' were then asked to state their own country of birth and that of their parents. Only respondents who stated that they themselves were born in a country other than Norway were defined as foreign-born.

Participants were asked if they had been immunised against the coronavirus (one, two or three doses), and if they had been vaccinated in Norway, abroad or both. They were also asked whether this had been reported to 'the Norwegian health service' (no definition of this was given). The question was formulated this way rather than referring to registration in SYSVAK, since it was assumed few would have heard of this.

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## Results

Of the 108 738 respondents, 95 452 were Norwegian-born and 13 286 were foreign-born. A total of 108 281 answered questions about the coronavirus vaccination, of whom 105 010 (97 %) responded that they had been immunised with at least one dose. Of these, 724 (<1 %) reported that they had only been vaccinated abroad (Table 1), and 409 (56 %) of the 724 responded that they had reported this to the Norwegian health service. Among all respondents who had been immunised against the coronavirus, 290 (<1 %) stated that they had been vaccinated both in Norway and abroad, and 241 (83 %) of these had reported their immunisation to the Norwegian health service.

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**Table 1**

Self-reported vaccination coverage for one or more doses of the coronavirus vaccine among participants in the public health survey conducted in Viken in November 2021.  $n = 108\,738$ .

Country of birth	No. vaccinated (%)	No. only vaccinated abroad (%)	No. who reported immunisation to the Norwegian health service (%) <sup>1</sup>
Norway	92 687 (98)	332 (< 1)	206 (62)
Abroad	12 323 (93)	392 (3)	203 (52)
Poland, Lithuania and Latvia	1 326 (80)	172 (13)	78 (45)
Total	105 010 (97)	724 (< 1)	409 (56)

<sup>1</sup>Among those who were only vaccinated abroad.

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The number of foreign-born persons who had received at least one dose of the coronavirus vaccine was 12 323 (93 %). Among the foreign-born population, 392 (3 %) stated that they had only been vaccinated abroad, and 203 (52 %) of these had reported this to the Norwegian health service. For the Polish, Lithuanian and Latvian respondents combined, the number who had been immunised against the coronavirus was 1326 (80 %), and of these, 172 (13 %) had only been vaccinated abroad. Of these, 78 (45 %) stated that they had reported it to the Norwegian health service.

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## Discussion

The proportion of foreign-born respondents who had only been vaccinated abroad was 3 %. More than half of these (52 %) had reported it to the Norwegian health service. Although the respondents state that they reported their immunisation to the Norwegian health service, it is uncertain whether this was actually registered by healthcare personnel in SYSVAK and consequently included in the vaccine statistics. However, the extent of such post-registration in SYSVAK will not change the conclusion we can draw from our results. According to the official vaccine statistics, the gap in vaccine coverage between Norwegian-born (94 %) and foreign-born (76 %) persons is 18 percentage points (2). The fact that 3 % of foreign-born persons have been vaccinated abroad only explains a fraction of this difference.

The results may be impacted by the representativeness of the sample. The survey has some known biases, which are described elsewhere (8). Among other things, younger men are underrepresented, as are men in general, while people with a high level of education are overrepresented. In Viken, 17 % of the adult population was born abroad, compared to 12 % in our sample. The proportion who stated that they had been vaccinated in our survey is far higher than for similar groups at a national level in SYSVAK at the time of the survey (Table 2) (9). This may indicate a sampling bias among both Norwegian-born and foreign-born persons. Being over a certain age and a higher education are both associated with a greater willingness to be vaccinated (7). The skewed selection of foreign-born persons in the sample is also probably related to how well they are integrated, since the survey was only in Norwegian and required access to the BankID system. This may have led to an overestimation of vaccination abroad since the sample of foreign-born persons appears to show a high level of willingness to be vaccinated. However, it may be that the most integrated foreign-born persons are more likely to have been vaccinated in Norway, and that we have therefore underestimated the proportion of foreign-born persons vaccinated abroad.

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**Table 2**

Compilation of vaccination coverage (%) for the first dose of the coronavirus vaccine among participants in the public health survey conducted in Viken in November 2021, and in the general population as reported in the Norwegian Institute of Public Health's weekly report for the period 8–14 November (9).

Country of birth	Viken (self-reported)	SYSVAK (9) <sup>1</sup>
Norway	98	91
Abroad	93	76
Poland	83	40
Lithuania	74	41
Latvia	76	38

<sup>1</sup>The weekly report for the period 8–14 November 2021 overlaps with the start of the county public health survey.

We have highlighted Poland, Lithuania and Latvia in particular because these countries constitute large immigrant groups, are geographically close to Norway, have low vaccine coverage and are relatively well represented in the dataset. Among these groups, a higher proportion had only been vaccinated abroad, but not to the extent that this explains the difference in vaccination coverage between persons born in these countries and those born in Norway.

The survey is from Viken, and whether the results can be generalised to the whole of Norway is uncertain. Additionally, Viken is Norway's largest county (home to 23 % of the population), and the variation in vaccination coverage between counties is small (4 percentage points difference between the highest and lowest) (2).

*The article has been peer-reviewed.*

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