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# **Original Research**

# Vaccination status and needs of asylum-seeking children in Denmark: a retrospective data analysis

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#### ABSTRACT

Objectives: Asylum seekers to Europe may come from war-torn countries where health systems have broken down, and there is evidence that asylum-seeking children have low coverage of childhood vaccinations, as well as uptake of immunisations in host countries. Such gaps in immunisation have important implications for effective national vaccination programmes. How we approach vaccination in children and adults entering Western Europe, where as a group they face barriers to health services and screening, is a growing debate; however, there are limited data on the vaccination status of these hard-to-reach communities, and robust evidence is needed to inform immunisation strategies. The aim of this study was to explore the vaccination status and needs of asylum-seeking children and adolescents in Denmark.

Study design: We conducted a retrospective data analysis of anonymised patient records for asylum-seeking children and adolescents extracted from the Danish Red Cross database. Methods: We retrospectively searched the Danish Red Cross database for children and adolescents (aged 3 months—17 years) with active asylum applications in Denmark as of October 28, 2015. Data were extracted for demographic characteristics, vaccination status and vaccinations needed by asylum-seeking children presenting to Red Cross asylum centres for routine statutory health screening.

Results: We explored the vaccination status and needs of 2126 asylum-seeking children and adolescents. About 64% of the study population were male and 36% were female. Eight nationalities were represented, where 33% of the total of children and adolescents were not immunised in accordance with Danish national guidelines, while 7% were considered partly vaccinated, and 60% were considered adequately vaccinated. Afghan (57% not vaccinated/unknown) and Eritrean (54% not vaccinated/unknown) children were the least likely to be vaccinated of all nationalities represented, as were boys (37% not vaccinated/

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unknown) compared with girls (27% not vaccinated/unknown) and children and adolescents aged between 12 and 17 years (48% not vaccinated/unknown) compared with 6- to 11-year olds (26%) and 0- to 5-year olds (22%). The health screenings resulted in 1328 vaccinations. The most commonly needed vaccines were diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b, (DTaP/IPV/Hib) which comprised 49% of the vaccines distributed, followed by the pneumococcal vaccine (Prevnar) (28%) and measles, mumps and rubella (MMR) vaccine (23%).

Conclusions: The finding that nearly one-third of asylum-seeking children and adolescents in Denmark were in need of further vaccinations highlights the gaps in immunisation coverage in these populations. These results point to the need to improve access to health services and promote national vaccine programmes targeted at these communities to facilitate vaccination uptake and increase immunisation coverage to reduce the risk of preventable infectious diseases among asylum-seeking children.

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#### Introduction

A record number of 1.2 million first-time asylum seekers were registered in Europe in 2015;1 of whom, 21,225 applied for asylum in Denmark, an increase of 43% between 2014 and 2015. Various studies have shown that migrant populations present different patterns of infectious diseases and healthrelated behaviours than local-born populations.<sup>2,3</sup> Simultaneously, the limited immunisation programmes in countries of origin for asylum seekers in Europe (e.g. due to conflict or insufficient health service infrastructure4) have led to outbreaks of vaccine-preventable diseases in host countries in Europe, especially among young children. Poor living conditions before, during and after migration, barriers to accessing timely and appropriate health care (including for vaccination and screening for infectious diseases in host countries<sup>6</sup>) and limited health infrastructure in many countries of origin (particularly in the context of conflict) meant that very few of the children included in this study had documentation of their vaccinations on arrival. As a result, in many cases healthcare personnel had to rely on self-reported vaccination status from the children's families, which in many cases also required interpreters for translation. As a result, very limited information was ultimately available on children's vaccination status and needs.

To be granted asylum in Denmark, both adult and child asylum seekers must meet certain conditions based on the United Nations Refugee Convention or the conditions for protection status defined in section 7 of the Danish Aliens Act.<sup>7–9</sup> All asylum seekers file their application in a reception centre run by the Danish Red Cross where they stay for the first weeks on arrival.<sup>8</sup> The Danish health care system is built on the principle of equal access for all and universal health insurance. However, asylum seekers are only partly covered by this system. Child asylum seekers have the right to receive acute medical care. Furthermore, general practitioners and child health nurses are accessible at the asylum centres. In case of chronic disease or elective treatment, doctors at the

asylum centres have to apply to the Danish Immigration Service to get costs covered.

Forty-five asylum centres existed in Denmark in 2017, which were run by the Danish Red Cross, the municipalities or both in a partnership. These include a reception centre, two departure centres, eight children centres and one 'special care' centre. All asylum seekers are on arrival accommodated in a reception asylum centre and are later referred to other asylum centres. 10 Migrant populations are thought to have higher rates of vaccine-preventable diseases<sup>6</sup> and potentially lower rates of vaccination coverage, 11 with very low rates documented in children, 11 yet data are lacking on vaccination status among migrants-and refugee and asylum-seeking children in particular—in Western Europe with which to inform policy in this area. 11,12 In Denmark, the government offers a statutory health check within 2 weeks of arrival to all migrants who make a claim for asylum, where additional immunisation screenings and vaccines are offered to all children and adolescents younger than 18 years old. Current vaccination protocols from the National Board of Health<sup>13</sup> include administration of what is known as the '5in-1 vaccine', which covers diphtheria, tetanus, pertussis, polio and Haemophilus influenzae type b (DTaP/IPV/Hib) and the conjugated pneumococcal vaccine. The vaccine against measles, mumps and rubella (MMR) is also distributed, and at the age of 12 years, an additional MMR vaccination is offered if the child has not previously received both MMR vaccines. Finally, the two human papillomavirus (HPV) vaccinations are offered to girls at the age of 12 years. 13,14 Additionally, asylum-seeking children younger than 6 years are entitled to and offered vaccinations against hepatitis B. 13 An overview of the Danish vaccination programme is given in Table 1. To address significant gaps in data on immunisations for refugee and asylum-seeking children in Europe, we aimed to explore the vaccination status and needs of all asylum-seeking children and adolescents with active asylum applications, presenting to statutory health checks at the Red Cross asylum centres in Denmark through a retrospective database analysis.

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