



# Current gaps in vaccination coverage: a need to improve prevention and care

Stéphanie Baggio<sup>1,2</sup> · Laurent Gétaz<sup>1,3</sup>

Received: 24 January 2019 / Revised: 12 February 2019 / Accepted: 13 February 2019 / Published online: 28 February 2019  
© Swiss School of Public Health (SSPH+) 2019

Vaccination is known as one of the most important achievement in public health, leading to a dramatic reduction in morbidity and mortality in all countries over the world. However, almost all countries also struggle with insufficient vaccination coverage, with at least two crucial threats to herd immunity: opposition to vaccination and under-vaccination of vulnerable groups. Masters et al. (2018) published in this issue a study on the vaccination status of Kenyan children. They demonstrated not only sub-optimal vaccination coverage, but also disparities related to ethnic communities. Unsurprisingly, the Somali ethnic minority faced more barriers to access vaccination. Therefore, this paper opens the discussion on vaccination coverage as well as migrants' susceptibility to vaccine-preventable diseases.

## Vaccination coverage: opposition to vaccination

In WEIRD (Western, Educated, Industrialized, Rich, and Democratic) societies, opposition to vaccination has a long story (Poland and Jacobson 2011). People question and refuse vaccination, perceived as unsafe because of a massive dissemination of poor science and claims of harm related to vaccines. As a result, antivaccine thinking and vaccination hesitancy are flourishing nowadays.

Vaccination delay and refusal lead to upsurges of vaccine-preventable disease outbreaks and to deaths. For example, in 2018 there was a measles outbreak in Europe, with 41,000 sick people and 37 deaths (WHO 2018). Measles is still an endemic disease in WEIRD countries (Altpeter et al. 2018). Delay and refusal of vaccination is not only a risk for the hesitant individual, but also for the whole community. Unfortunately, claims of vaccine-related harm spread as outbreaks, but not stories of children's death because they were not able to receive vaccinations (e.g., due to weakened immune system) and were infected by healthy but unvaccinated children. This topic has been increasingly investigated in epidemiological research during the previous decade in WEIRD countries (Altpeter et al. 2018; Larson et al. 2014).

The picture has long been different in developing countries. In Africa, the vaccination coverage has historically been low and parents have been eager to vaccinate their children to prevent them from dying from vaccine-preventable diseases. However, vaccination programs have started to be challenged as well in African countries, such as Nigeria (Cooper et al. 2018), Kenya (UNICEF Kenya 2011), and Zimbabwe (Machekanyanga et al. 2017). Routine childhood vaccination programs are somewhat victims of their success: as morbidity and mortality declined, the question "why vaccinate?" is rising. While in WEIRD societies, people mostly challenge vaccination for medical and philosophical reasons, in Africa, religious and political reasons prevail, along with the "Western plot" argument (UNICEF Kenya 2011; Machekanyanga et al. 2017). However, the consequences are similar: increased morbidity and mortality due to vaccine-preventable diseases.

Overall, public health efforts should focus not only on hesitant individuals in WEIRD societies, but also on the rising opposition in developing countries. Education and information strategies should emphasize on vaccines' safety and effectiveness.

✉ Stéphanie Baggio  
stephanie.baggio@hcuge.ch

Laurent Gétaz  
laurent.getaz@hcuge.ch

<sup>1</sup> Division of Prison Health, Geneva University Hospitals, University of Geneva, Geneva, Switzerland

<sup>2</sup> Department of Forensic Psychiatry, Institute of Forensic Medicine, University of Bern, Bern, Switzerland

<sup>3</sup> Division of Tropical and Humanitarian Medicine, Geneva University Hospitals, University of Geneva, Geneva, Switzerland

## Vaccination of vulnerable populations: the case of migrants

Migrants and refugees are especially vulnerable, as shown in the study of Masters et al. (2018): They have a lower vaccination coverage than the host community (Mipatrini et al. 2017). Indeed, they face several barriers to adequate vaccination (e.g., socioeconomic inequalities, Kien et al. 2017). They have a reduced immunization rate, similar to the one of their country of origin and they lack access to immunization service delivery (Mipatrini et al. 2017). As a consequence, they are unvaccinated or under-vaccinated, as masterly shown by Masters et al. (2018).

Therefore, some groups of vulnerable individuals share a disproportionate burden of vaccine-preventable diseases. An equitable access to vaccination is needed to protect these vulnerable groups and to reduce morbidity and mortality. It would also protect the whole community, as the low vaccination coverage among migrants can decrease herd immunity (Hui et al. 2018). As there is a high immunization uptake and because migrants are often proactive about their health (Hargreaves et al. 2018), there are promising opportunities of successful catch-up vaccination.

Reaching migrants is challenging, so all opportunities for catch-up vaccination should be used. This includes free vaccination in migration centers and detention settings, which are likely to host a large proportion of unvaccinated individuals (Hargreaves et al. 2018). These catch-up vaccination programs should include adults as well. Indeed, adults are often excluded from catch-up vaccination even if they are likely to contract and disseminate vaccine-preventable diseases (Hargreaves et al. 2018).

## To conclude

Focusing on these two threats that weaken herd immunity would help to achieve the target 3.8 of the Sustainable Development Goal on health and to provide access to access “vaccine for all” in every country, and thus, to reduce health inequalities.

## References

- Altpeter E, Wymann MN, Richard J-L, Mäusezahl-Feuz M (2018) Marked increase in measles vaccination coverage among young adults in Switzerland: a campaign or cohort effect? *Int J Public Health* 63:589–599. <https://doi.org/10.1007/s00038-018-1102-x>
- Cooper S, Betsch C, Sambala EZ, McHiza N, Wiysonge CS (2018) Vaccine hesitancy—a potential threat to the achievements of vaccination programmes in Africa *Hum Vaccin Immunother* 14:2355–2357. <https://doi.org/10.1080/21645515.2018.1460987>
- Hargreaves S, Nellums LB, Ravensbergen SJ, Friedland JS, Stienstra Y (2018) Divergent approaches in the vaccination of recently arrived migrants to Europe: a survey of national experts from 32 countries, 2017. *Eurosurveillance* 23:1700772. <https://doi.org/10.2807/1560-7917.es.2018.23.41.1700772>
- Hui C, Dunn J, Morton R, Staub LP, Tran A, Hargreaves S, Greeaway C, Biggs BA, Christensen R, Pottie K (2018) Interventions to improve vaccination uptake and cost effectiveness of vaccination strategies in newly arrived migrants in the EU/EEA: a systematic review. *Int J Environ Res Public Health*. <https://doi.org/10.3390/ijerph15102065>
- Kenya UNICEF (2011) Combatting antivaccination rumours: lessons learned from case studies in East Africa. UNICEF, Nairobi
- Kien VD, Van Minh H, Giang KB, Mai VQ, Tuan NT, Quam MB (2017) Trends in childhood measles vaccination highlight socioeconomic inequalities in Vietnam. *Int J Public Health* 62:41–49. <https://doi.org/10.1007/s00038-016-0899-4>
- Larson HJ, Jarrett C, Eckersberger E, Smith DMD, Paterson P (2014) Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: a systematic review of published literature, 2007–2012. *Vaccine* 32:2150–2159. <https://doi.org/10.1016/j.vaccine.2014.01.081>
- Machekanyanga Z, Ndiaye S, Gereade R, Chindedza K, Shibeshi ME, Goodson J, Daniel F, Zimmerman L, Kaiser R (2017) Qualitative assessment of vaccination hesitancy among members of the Apostolic Church of Zimbabwe: a case study. *J Relig Health* 56:1683–1691. <https://doi.org/10.1007/s10943-017-0428-7>
- Masters NB, Wagner AL, Carlson BF, Muuo SW, Mutua MK, Boulton ML (2018) Childhood vaccination in Kenya: socioeconomic determinants and disparities among the Somali ethnic community. *Int J Public Health*. <https://doi.org/10.1007/s00038-018-1187-2>
- Mipatrini D, Stefanelli P, Severoni S, Rezza G (2017) Vaccinations in migrants and refugees: a challenge for European health systems. A systematic review of current scientific evidence. *Pathog Glob Health* 111:59–68. <https://doi.org/10.1080/20477724.2017.1281374>
- Poland GA, Jacobson RM (2011) The age-old struggle against the antivaccinationists. *N Engl J Med* 364:97–99. <https://doi.org/10.1056/NEJMp1010594>
- WHO (2018) Nombre record de cas de rougeole dans la Région européenne, WHO, Copenhagen, Danemark, August 20, 2018

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.