**EDITORIAL**

**The march of measles  - Can Travel Medicine Halt the Pace?**

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Measles was the subject of a recent episode of the US television drama *Madam Secretary* (1); extremely timely given the current global measles outbreaks, the increase in vaccine hesitancy, and the rise in anti-vaccine misinformation on social media platforms (2).

In the pre-vaccine era, measles was pervasive; a leading cause of child morbidity and mortality, responsible for over 2 million deaths annually. Thanks to immunisation programmes, the global disease burden has reduced significantly, but measles remains a leading cause of vaccine-preventable deaths in children under 5, and an important cause of morbidity in resource poor countries. 2016 was the first year on record when annual measles deaths fell below 100,000. However, this was not sustained and in 2017 deaths rose to 110,000 (3). With insufficient global vaccination coverage, antivaccine sentiment and vaccine hesitancy (reported in over 90% of countries worldwide), it is not difficult to understand the enduring threat to herd immunity (4).

With suboptimal measles vaccination coverage below the 95% goal in many countries, those who are unvaccinated, or inadequately vaccinated communities are susceptible to imported cases. Particularly vulnerable are those in whom vaccination is contraindicated due to immunosuppression. This public health threat has resulted in some countries mandating vaccinations; for example Germany’s Health Minister has recently submitted a bill for consideration that would make MMR vaccination mandatory for school children aged 6 years and upwards. Parents with unvaccinated children would face a fine of up to 2500 euros. Switzerland has reported two measles related deaths since the start of 2019. One death was in a 30-year old unvaccinated male and the second in an immuocompromised 70-year old cancer patient. Health authorities throughout Europe have ramped up public health information dissemination and measles vaccination has become an important talk show topic. The anti-vaccine sentiment is strong in defined geographic areas and this is a major barrier to combatting measles.

The major threat that measles presents to the unvaccinated global traveller is exemplified in this issue of *Travel Medicine and Infectious Disease*. Mortier and colleagues report on a 45-year old traveller presenting in Marseille, France with measles after a 3-week trip to Madagascar (5) where a measles outbreak is ongoing and where vaccination coverage in the population is estimated to be below 60%. Measles is not just a problem at “exotic” locations. City break tourists to Rome, Prague, Athens and all the other beautiful destinations in Europe should also have measles on their radar. The European Centre for Disease Prevention and Control monitors measles <https://ecdc.europa.eu/en/measles> based on data from The European Surveillance System (TESSy). The report for the period March to February 2019 makes for sombre reading. In this period, 30 EU/EEA member states reported 11,967 cases of measles of which 71% were laboratory confirmed. The highest numbers of cases were reported from Italy, France, Greece, Romania, the United Kingdom, Germany and Slovakia. The EU/EEA average notification rate per million population is 23.1 and the following countries reported cases numbers above this rate: Greece, Slovakia, Romania, Italy, France and the Czech Republic. As well as acquiring measles during the trip, measles transmission on commercial aircraft has been reported and can lead to follow-on transmission on return (6,7).

Whilst measles vaccination, consisting of a two-dose schedule of measles containing vaccine given during early childhood, is almost universally offered (and sometimes mandated) as part of national immunisation programmes, gaps in vaccination coverage persist leaving some vulnerable to the disease. Of concern are young adults (‘millennials’), who may have either completely missed out on routine vaccination, failed to complete a two-dose schedule or received single dose vaccines which may be of uncertain efficacy. Population data consistently shows these groups and others, including migrant populations and babies aged under 12 months, to be at higher risk of infection [8-10].

The pre-travel health consultation provides the opportunity to explore the measles vaccination and/or likely immune status of all global travellers, and where gaps are identified, to offer vaccination accordingly (either one or two doses of measles containing vaccine), taking into account individual travel risk assessment (which should determine duration of stay, likelihood of mixing closely with the local population, reported measles outbreaks and traveller choice). It is accepted that those born before measles containing vaccine was widely introduced into national schedules are likely to be immune because of exposure to natural disease; nevertheless, there is no upper age limit to offering a measles containing vaccine, and vaccination should be considered in those who are not protected or where immune status is unknown. Experience of calls to a [national travel health telephone helpline](https://travelhealthpro.org.uk/contact) for health professionals suggests the recent upsurge in measles cases worldwide, combined with confusion regarding outbreak reporting, elimination status and endemicity, has impacted on requests for guidance on measles vaccination particularly for the aforementioned older group of travellers, and babies less than 12 months of age; this despite the previous (unfounded) concerns about vaccine safety . Whilst travel clinics should question the wisdom of travel to areas reporting measles outbreaks, for such infants, early measles vaccination can be offered from 6 months of age particularly for longer travel and for those mixing with local populations (i.e. visiting friends and relatives or where a baby may be placed in a nursery facility overseas). Because of the potential interference from maternal antibodies, an early dose of measles vaccine given in infancy should be considered as a dose additional to the routine schedule [10].

So, can travel medicine slow the march of measles? The answer is a resounding “yes”. If Facebook can remove anti-vaccine misinformation from its platform, surely travel medicine clinicians are ideally placed to help address this vaccination gap by ‘making every contact count’(11).

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