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COMMENTARY
What causes hepatitis A in travellers to endemic countries? Travel is necessary but not sufficient – a risk factor, not a cause

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A recent paper by Kumbang *et al.* includes an excellent account of the investigation into an outbreak of hepatitis A virus infection in an extended family linked to travel to Pakistan [1]. The application of genotyping to the investigation greatly enhanced the quality of the epidemiology and demonstrates one of the many benefits of a good marriage between epidemiology and microbiology. Here molecular methods proved helpful in providing evidence for suspected links between cases. The same laboratory also demonstrated the value of showing that simultaneous outbreaks of hepatitis A occurring in the same risk groups may not, in fact, be linked despite the epidemiology [2]. Advances in molecular methods bring new challenges for epidemiologists and other public health practitioners, and the quality of the laboratory investigation may now outstrip the epidemiological investigation. However, there are some basics of field investigation that cannot yet be replaced by a laboratory test, including a thorough interview with cases.

The purpose of an outbreak investigation is to inform the right public health action. Although the focus is often on curtailing the outbreak under investigation, the implications of any findings may be far more important for the prevention of future outbreaks (especially if the investigation starts when the outbreak is already on the wane). What future action do we need to take to prevent travel-related infectious disease outbreaks and how can we better design our investigations to inform such action?

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Travel history is a standard part of hepatitis A outbreak investigation. If a person has neither travelled nor been a contact of a case, then we enquire about where they have been, who they have contacted, where they have eaten and other information. The information is important to track down a possible source, to work out if or how infection control measures have failed and to prevent further and future cases. But if any person involved in the outbreak has travelled to an endemic country within the incubation period then that is often the point at which the investigation stops. Travel is thought to be sufficient information to explain the illness, despite the fact that the incubation period is so variable and rates of asymptomatic cases so high that there is usually uncertainty about chains of transmission. The study by Kumbang *et al.* [1] is a good illustration, but is no different in this regard from many others. Investigations at best look for the exposure abroad that might have led to the illness, rather than identifying missed opportunities to vaccinate [3–5]. But why do we think that travel explains illness – why is a risk factor thought of as a cause? Travel is an important risk factor in non-endemic countries, associated with nearly half of all cases reported in the USA in recent years [6]. Nonetheless, thousands of travellers visit hepatitis A-endemic countries every year without becoming ill [7]. Is that not of some interest? What is the difference between travellers who acquire infection and those who do not?

Hepatitis A in travellers to endemic countries is preventable through vaccines that are safe and highly effective even when given soon after exposure. When a traveller acquires hepatitis A we can trace a causal chain of events, before the infection occurred, that led

to a failure of vaccination. Let us consider that chain of events more closely. Why would a traveller neglect to get a safe effective vaccine for a potentially life-threatening infection that is publicly funded (in the UK) and readily available? A number of possible reasons are suggested by Kumbang *et al*. including possible confusion about whether or not it is necessary to pay for the vaccine. Another possibility is that the recommendation for hepatitis A vaccine is lost in the long list of other seemingly more important vaccines and travel-related risks. Kumbang *et al*. [1] mention a further factor: these infections occur most often in those who are visiting friends and relatives and, for this reason, do not think to ask about health risks [8]. Is that explanation sufficient for public health action? Surely not – we now need to know how we can change this situation. Plenty of information is available about the need to be vaccinated but it does not seem to reach those who need to know. How do we ensure that individuals and communities are aware of the risk and the likelihood that children or grandchildren may not have the same immunity as parents or grandparents, and that there is a free, safe, effective and long-lasting vaccine available? How can we ensure that everyone is informed and vaccination promoted as ardently as the airlines promote travel insurance or seat upgrades when we book our flights online?

Perhaps it is time to start where we mean to end – with action. The action is immunization of travellers to endemic countries, including those who are visiting friends and relatives. Our public health investigations should help us to achieve this objective, but currently they do not seem to help. Interviews with people who have acquired hepatitis A through travel could easily be used to generate and/or test hypotheses about why they did or did not get vaccinated and how we can facilitate people taking the recommended action in future. Further steps will be needed to test those hypotheses by designing and evaluating interventions. Travel to endemic countries should be an unacceptable explanation for hepatitis A. Travel without prior hepatitis A vaccination requires an explanation. This small change in thinking could have a big impact on the epidemiology of travel-related hepatitis A in non-endemic countries.

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DECLARATION OF INTEREST

None.

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