Ghana, but the proportional mortality was not higher than in children.

Third, Dhingra and colleagues have made no attempt to assess the validity of verbal autopsy procedures in India. The subset of deaths (14%) in this study that had occurred in a health facility could have been used in a validation exercise. Ascertaining proportional mortality attributable to malaria by use of verbal autopsy in areas of low malaria transmission has substantial limitations and the estimates of malaria mortality generated by this method should be interpreted with caution.

The letter represents the views of the authors but not the views of the US Centers for Disease Control and Prevention. We declare that we have no conflicts of interest.

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1 Dhingra N, Jha P, Sharma VP, et al, for the Million Death Study Collaborators. Adult and child malaria mortality in India: a nationally representative mortality survey. *Lancet* 2010; **376:** 1768–74.
2 Setel P, Whiting D, Hemed Y, et al. Validity of verbal autopsy procedures for determining cause of death in Tanzania. *Trop Med Int Health* 2006; **11:** 681–96.
3 Snow R, Armstrong J, Forster D, et al. Childhood deaths in Africa: uses and limitations of verbal autopsies. *Lancet* 1992; **340:** 351–55.
4 Chandramohan D, Maude G, Rodrigues L, et al. Verbal autopsies for adult deaths: their development and validation in a multicentre study. *Trop Med Int Health* 1998; **3:** 436–46.
5 Adjuik M, Smith T, Clark S, et al. Causes-specific mortality rates in sub-Sahran Africa and Bangladesh. *Bull World Health Organ* 2006; **84:** 181–88.

Neeraj Dhingra and colleagues[1] report higher estimates of annual malaria deaths in India than previously suggested. South Asia abounds in life-threatening undifferentiated febrile illnesses like malaria. Typhoid, typhus (rickettsial illness), leptospirosis, and dengue are some of the common diseases that mimic malaria. The transmission rate of typhoid fever, for example, is 1600 per 100 000 population in some parts, and conservative annual estimates of typhoid deaths worldwide are about 200 000.[2] Blood cultures, when available, are only positive in about 50% of cases, and typhoid, like malaria, remains a largely undiagnosed disease in the community.

Additionally, in a large fever study[3] in south Asia, typhus and leptospirosis were very important causes of undifferentiated fever, yet none of the treating physicians was sufficiently informed about these diseases to put them down as differential diagnoses. Unlike for malaria, however, studies on these undifferentiated febrile illnesses, including typhoid fever, are poorly funded. Indeed, the burden of disease for these common illnesses remains unknown owing to a severe lack of proper fever diagnostics.

Against this background, more concrete proof of malaria with better methods might be required to establish Dhingra and colleagues' claims about increased malaria mortality in India.

I declare that I have no conflicts of interest.

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1 Dhingra N, Jha P, Sharma VP, et al, for the Million Death Study Collaborators. Adult and child malaria mortality in India: a nationally representative mortality survey. *Lancet* 2010; **376:** 1768–74.
2 Parry CM, Basnyat B. Typhoid and paratyphoid fevers. In: Warrell DA, Cox TM, Firth JD, eds. Oxford textbook of medicine, 5th edn. Oxford: Oxford University Press, 2010.
3 Murdoch DR, Woods CW, Zimmerman MD, et al. The etiology of febrile illness in adults presenting to Patan Hospital in Kathmandu, Nepal. *Am J Trop Med Hyg* 2004; **70:** 670–75.

The methods used by Neeraj Dhingra and colleagues[1] have some potential sources of inaccuracy and bias, which could alter the number of malaria-attributed deaths. Although Dhingra and colleagues were quite fastidious in their methods, concerns about the accuracy of diagnoses by physicians

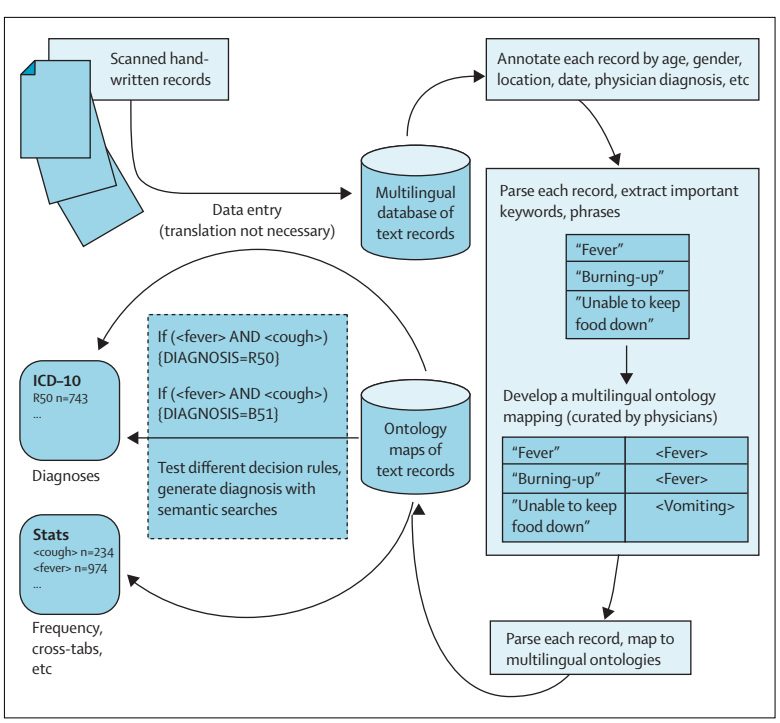

Figure: **A computational approach to diagnosis and calculation of the number of deaths related to malaria in India**
ICD=International Classification of Diseases.