

In the news

THE VALUE OF VACCINES

Researchers at the University of Pittsburgh, Pennsylvania, USA, report in the *New England Journal of Medicine* that vaccination programmes have prevented 100,000,000 serious infections in the United States since 1924. To obtain this number, the authors collected 88,000,000 public health records going back to the nineteenth century and built an open-access disease database.

The database contains records from time points before and after vaccines became available, and on the basis of these data, it was possible to project how many infections would have occurred without vaccines. The authors said that such studies should help to inform the discussion about the risks and benefits of vaccines (*The New York Times*, 29 Nov 2013). Furthermore, the data can help to identify new patterns in the spread of infectious diseases. For example, the data show that, in 2012, the United States experienced the biggest outbreak of pertussis since 1959, despite the availability of a vaccine. The authors state that this can be attributed, at least in part, to intentional undervaccination.

Interestingly, the US Food and Drug Administration recently released results from a pertussis vaccination study in baboons, in which the currently used acellular vaccine protected from disease, but not from infection and further spread. This reduces herd protection (protection of unvaccinated individuals owing to reduced spread in vaccinated individuals); previously used whole-cell vaccines were probably better at limiting community spread. The authors of this report conclude that “plans for addressing the resurgence of pertussis should include continued efforts to enhance aP (acellular pertussis) immunization” and “vaccination with aP provides excellent protection from severe pertussis” (*Forbes*, 26 Nov 2013). Both studies highlight that vaccines are important for the prevention of infectious diseases, but their success depends on community coverage.

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