

- specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351**: 637–41.
- 2 Metcalf J. Is measles infection associated with Crohn's disease? The current evidence does not prove a causal link. *BMJ* 1998; **316**: 166.
 - 3 Chen RT, DeStefano F. Vaccine adverse events: causal or coincidental? *Lancet* 1998; **351**: 611–12.
 - 4 Begg N, Ramsey M, White J, Bozoky Z. Media dents confidence in MMR vaccine. *BMJ* 1998; **316**: 561.
 - 5 Carter H, Jones IG. Measles immunisation: results of a local programme to increase vaccine uptake. *BMJ* 1985; **290**: 1717–19.

Sir—Any future investigation of causation will need to address the two main weaknesses of Andrew Wakefield and colleagues¹ case series—that the cases were highly selected and the underlying population is not clear. We conducted a population-based study in the summer of 1997 in Swansea which was designed to avoid selection bias and could be replicated across the UK. The study was undertaken in response to concerns being expressed in the local media about the postulated link between MMR and autism; in particular parents had raised the question of whether there could have been a local problem with a batch of faulty MMR vaccine. This aspect of the investigation (particular batches) was unremarkable and not reported here.

The district-wide child health computer system has a vaccination record for all children in Iechyd Morgannwg (formerly West Glamorgan), and it also has information about important medical problems for any children referred to Community Child Health Services. A search was done for all children born since 1990 with an ICD 9 or ICD 10 code for autism.

The computer vaccination history was examined to establish whether the child had received a first-dose MMR vaccination. The proportion of children with autism who had received MMR vaccination was calculated and compared with that for all children in the district.

18 children with a diagnosis of autism, born between 1990 and 1994 were identified, 16 of whom had received MMR vaccination, giving a first-dose MMR vaccination rate for children with autism of 88.9%. The vaccination rate for all children was 95.3%. The difference in vaccination rates is not statistically significant.

The method, based on the rapid interrogation of child-health computer systems could be replicated on a larger scale as a formal, UK-wide, case-control or retrospective cohort study. A case-control study with four controls

for every case and an 80% power to detect a two-fold increase in the risk of autism after MMR vaccination would require 691 cases—an assumption of a population MMR coverage of 95%. If the morbidity recording were similar to that of West Glamorgan (population 370 000) this would require combining results from a general population of 14.3 million people. We suggest that this is a practical way of rapidly investigating this speculative association.

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- 1 Wakefield AJ, Murch S, Anthony A, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351**: 637–41.

Sir—We were surprised and concerned that the *Lancet* published the paper by Andrew Wakefield and colleagues¹ in which they alluded to an association between MMR vaccine and a non-specific syndrome, yet provided no sound scientific evidence. The commentary by Robert Chen and Frank DeStefano² points out the serious flaws in the paper.

We acknowledge that anecdotal reports may sometimes contribute to the generation of hypotheses, but risk factors for rare conditions, such as those described, can only be identified by well designed epidemiological studies.

This publication provided a platform for the expression of views about MMR vaccination that have no proven scientific foundation: this could have damaging effects on public and professional confidence in vaccines in general. The MMR vaccination programme has been successful in this country, and we are now at a point when the elimination of measles is a real possibility. If, as a result of this paper, parents reject MMR vaccine, this could lead to a re-emergence of measles infection with associated deaths and permanent neurological damage among young children, and a resurgence of rubella infection leading to a rise in congenital rubella births and terminations of pregnancy. Has nothing been learned from the experiences with pertussis vaccine in the 1970s?³

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- 1 Wakefield AJ, Murch SH, Anthony A, et al. Ileal-lymphoid nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351**: 637–41.
- 2 Chen RT, DeStefano F. Vaccine adverse events: causal or coincidental? *Lancet* 1998; **351**: 611–12.
- 3 Gangarosa EJ, Galazka AM, Wolfe CR, et al. Impact of anti-vaccine movements on pertussis control: the untold story. *Lancet* 1998; **351**: 356–61.

Sir—The account given by Andrew Wakefield and colleagues¹ is interesting, yet the structure of the study with biased case ascertainment and no suitable controls makes the findings no more than anecdotal. Perhaps the only saving grade for *The Lancet* is the accompanying well balanced commentary.²

Chronic non-specific colitis, as described by Wakefield, is a common form of non-infective colonic inflammation in the age group studied. Furthermore, of 329 consecutive colonoscopies done at Great Ormond Street Hospital (children aged 1 month to 16 years with chronic diarrhoea), 40 children were noted to have macroscopic ileal/ileocolonic lymphoid nodular hyperplasia, giving a prevalence in this selected population of 12%. 85% of these children had minor immunodeficiencies, as reported by Wakefield, but none had neuropsychiatric disorder.

The investigators concede that they have not proven an association between MMR immunisation and the syndrome described, and have in reality presented no hard data on this matter. The report has led, intentionally or otherwise, to the erroneous assumption by the media and parents of a cause and effect relation between MMR immunisation, inflammatory bowel disease, and developmental disorder, resulting in parental confusion about the safety of immunisation. This country's childhood immunisation programme has dramatically reduced wild-type measles infection with its associated significant morbidity and mortality. Wakefield's account risks setting back child health 30 years through disruption of this programme. If these researchers are able to prove cause and effect between immunisation and the described syndrome they should do so straight away. If they are unable to do so they should publicly set the matter straight lest the health of our nation's children suffers.

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