

From the myth of MMR-autism to the resurgence of measles

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Declaration of Interest: DMS has acted as a paid consultant to vaccine manufacturers.

Is measles vaccination a risk factor for inflammatory bowel disease?

N P Thompson, S M Montgomery, R E Pounder, A J Wakefield

Summary

Measles virus may persist in intestinal tissue, particularly that affected by Crohn's disease, and early exposure to measles may be a risk factor for the development of Crohn's disease. Crohn's disease and ulcerative colitis occur in the same families and may share a common aetiology. In view of the rising incidence of inflammatory bowel disease (Crohn's disease and ulcerative colitis), we examined the impact of measles vaccination upon these conditions.

Prevalences of Crohn's disease, ulcerative colitis, coeliac disease, and peptic ulceration were determined in 3545 people who had received live measles vaccine in 1964 as part of a measles vaccine trial. A longitudinal birth cohort of 11 407 subjects was one unvaccinated comparison cohort, and 2541 partners of those vaccinated was another. Compared with the birth cohort, the relative risk of developing Crohn's disease in the vaccinated group was 3.01 (95% CI 1.45-6.23) and of developing ulcerative colitis was 2.53 (1.15-5.58). There was no significant difference between these two groups in coeliac disease prevalence. Increased prevalence of inflammatory bowel disease, but not coeliac disease or peptic ulceration, was found in the vaccinated cohort compared with their partners.

These findings suggest that measles virus may play a part in the development not only of Crohn's disease but also of ulcerative colitis.

Lancet 1995; **345**: 1071-74

See Commentary page 1062

THE LANCET

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EDITORIAL

- 49 **WHO: where there is no vision, the people perish**
50 **Supporting the WHO at a critical juncture**
51 **Open letter to Executive Board of WHO**

COMMENTARY

- 52 **Total lymphoid irradiation—not for rheumatoid arthritis**
P Rackoff, T Feldman
53 **Health inequalities recognised in UK** A Scott-Samuel
54 **Assessment of fetal nuchal translucency test for Down's syndrome** J P Neilson
55 **Hyponatraemia, hypothyroidism, and role of arginine-vasopressin**
F W F Hanna, M F Scantlon
56 **Medical Editors Trial Amnesty** R Horton

ARTICLES

- 57 **Randomised double-blind comparison of placebo and active treatment for older patients with isolated systolic hypertension**
J A Staessen and others, for the Systolic Hypertension in Europe (Syst-Eur) Trial Investigators
58 **A case-control study of measles vaccination and inflammatory bowel disease**
M Feeney and others, for the East Dorset Gastroenterology Group
59 **Outcomes of transplantation with matched-sibling and unrelated-donor bone marrow in children with leukaemia**
S Hongeng and others
60 **Effect on infant mortality of iodination of irrigation water in a severely iodine-deficient area of China** G R DeLong and others

EARLY REPORT

- 61 **Randomised trial of systemic methotrexate versus laparoscopic salpingostomy in tubal pregnancy**
P J Hajenius and others

Measles link to growing bowel disease

by **VICTORIA MACDONALD**

Health Correspondent

What link between measles and IBD?

'These findings provide no support for the hypothesis that measles vaccination in childhood predisposes to the later development of . . . inflammatory bowel disease'

A *Lancet* report in 1995 of an association between measles vaccination and subsequent development of inflammatory bowel disease (IBD) led to concern over safety of the vaccine and to some parents declining immunisation for their children. Now Mark Feeney and colleagues' study of patients with IBD and matched healthy controls reports no evidence of an association. Will this negative report be as well publicised as the 1995 study?

See page 764

THE LANCET

Volume 351, Number 9103 • Founded 1823 • Published weekly • Saturday 28 February 1998

EDITORIAL

609 **Control of health claims in foods**

COMMENTARY

610 **Assessment of risk of cancer after renal transplantation**

C G Newstead

611 **Vaccine adverse events: causal or coincidental?**

R T Chen, F DeStefano

612 **How the colon begets gallstones**

T S Low-Beer

613 **Sublingual immunotherapy for allergic respiratory disease**

P G Holt and others

ARTICLES

615 **Prediction of death and myocardial infarction by screening with exercise-thallium testing after coronary-artery-bypass grafting**

M S Lauer and others

623 **Effect of long-term immunosuppression in kidney-graft recipients on cancer incidence: randomised comparison of two cyclosporin regimens**

J Dantal and others

629 **Randomised controlled trial of local allergoid immunotherapy on allergic inflammation in mite-induced rhinoconjunctivitis**

G Passalacqua and others

633 **Primary symptomless colonisation by *Clostridium difficile* and decreased risk of subsequent diarrhoea**

J K Shim and others

EARLY REPORT

637 **Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive-developmental disorder in children**

A J Wakefield and others

CASE REPORT

NEWS

Science & n

651 UK patients with
reviewed

Short-course AZ
transmission

652 Multiple therapy
Cancer survivors

Schizophrenia c

653 Antipodean apo
Fulminant hepat

Feature

654 Sounding out the
doppler

Dispatches

655 Brazil's health s
Spain's drug-spe

Policy & pec

656 Abuse in Roman
France reduces

Illicit drug use in

657 Depleted uranium
US anthrax-vacc

Japan challenge

658 Aid for Afghanist
Biological-weap

SEMINAR

659 **Familial Mec**
E Ben-Chetrit, M

WORLD HE

SUNDAY TIMES

3/8/97

Crying shame of the vaccination victims

Robert Fletcher and William Kessick, right, were vaccinated against measles, mumps and rubella. Within two weeks, their health was destroyed. How should families weigh the risks of inoculation against the benefits?

Margarette Driscoll and Steve Connor report 12

the letter from the gov- says his mother. "His speech measles vaccines were in- Government officials are

**Ban three-in-one
jab urge doctors
after new fears**

New MMR studies revive Crohn's and autism fears

Exclusive

By Louise McKee

Pressure on the Government to order a full review of all...



A letter from Ms Jowell to Labour backbench MP Lew Smith obtained by Pulse confirmed that Chief Medical Officer Kenneth...

Ms Jowell told the Commons: 'If fresh evidence becomes available I will insist that further...

ly confirm our suspicions and take them further,' he said.

Action on MMR fears

Exclusive

By Louise McKee

The Department of Health is urgently collating scientific evidence in an attempt to shed light on alleged links between MMR vaccine and serious illness.

Pulse has learned that the department solicited fax messages from US scientists named in a recent Commons debate following Pulse's disclosure last week that five unpublished studies may support links between MMR and Crohn's disease and autism.

The US scientists contacted...



Prof Roy Pounder
Royal Free Hospital Medical School

links between immunology and autism.

Kenneth Calman is understood to want to weigh up all available...

deciding whether or not to suspend the vaccine pending detailed investigations.

The trawl for evidence comes ahead of a meeting between Public Health Minister Tessa Jowell, Sir Kenneth, researcher Dr Andrew Wakefield of the Royal Free Hospital, London, and solicitors representing some 850 cases where it is alleged MMR vaccine led to serious side-effects. The meeting will take place on September 10.

Professor Roy Pounder, professor of medicine at the Royal Free Hospital, spoke on BBC TV's *Newsnight* programme last week in strong defence of the link.

He said: 'I am very convinced. The story, the science behind it, is thoroughly coherent and rigorous... biologically plausible - data, almost all of them demonstrate exactly the same finding, that the virus is there.'

Dr Wakefield is set to speak on the alleged link with autism at a scientific meeting in San Diego next month and the first of his five papers is scheduled for publication some time in October.

Pressure on the Government is increased by pending legal cases which could hit the courts by Christmas. The department is understood to be...

field's four other studies, which are as yet incomplete.

Vaccine specialists suggested last week that the papers could be fast-track published in order to allow the department to make a swift decision.

Meanwhile, the department launched a fax campaign to communicable disease control consultants and regional epidemiologists restating that no link between the MMR vaccine and Crohn's disease and autism had yet been established.

The department has previously dismissed research on MMR and Crohn's disease published in *The Lancet* in 1985 as flawed.

London Pulse page 4

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Downing Street refused to give

We want to move things forward.

slide back to conflict.

MMR jab 'may cause autism'

From Page One

world authority on the detection of viruses, revealed his findings to a US Congress hearing on Thursday. He said further research was immediately needed to establish whether the MMR jab might be responsible for the children's brain damage.

The professor was in Washington with British researcher Andrew Wakefield, who caused uproar two years ago by suggesting the possibility of a link between MMR and autism in children should be thoroughly investigated. Dr Wakefield sent bowel samples to the professor for independent analysis.

Professor O'Leary said his discovery provided 'compelling evidence' of an association between infection by the measles virus and autism in the children, many of whose par-

THE DAMNING EVIDENCE

Full report: Pages 8, 9

ents said they developed the condition after they had been injected with MMR. 'Measles virus is present in the gut of these children,' he said. 'It shouldn't be there. There needs to be a full investigation of this with proper funding.'

Dr Wakefield, who works at the Royal Free Hospital in London, claims to have identified a new disease, autistic enterocolitis, characterised by unusual inflammation of the gut, in nearly 150 children who became autistic after first developing normally. Doctors are investigating the theory that it is the interaction of the measles and the mumps viruses in the same inoc-

ulation that causes the gut damage and consequent autism.

Dr Wakefield's claims have been consistently attacked by the medical establishment, and he has been banned by his employers from speaking to the Press. Last night, vaccine makers insisted there was 'no evidence' to link the vaccine and autism.

The Department of Health said Professor O'Leary's study was 'uninterpretable' and there was no reason for parents to be concerned. A spokesman said: 'It does not prove anything and there remains no evidence to suggest there is any link between MMR and autism. It would be a disaster if children were to die of vaccine-preventable disease over unfounded vaccine safety scares.'

New evidence revives fears over safety of MMR vaccine

THE safety of the MMR jab was again called into question last night after doctors unveiled new evidence linking it to autism and bowel disease.

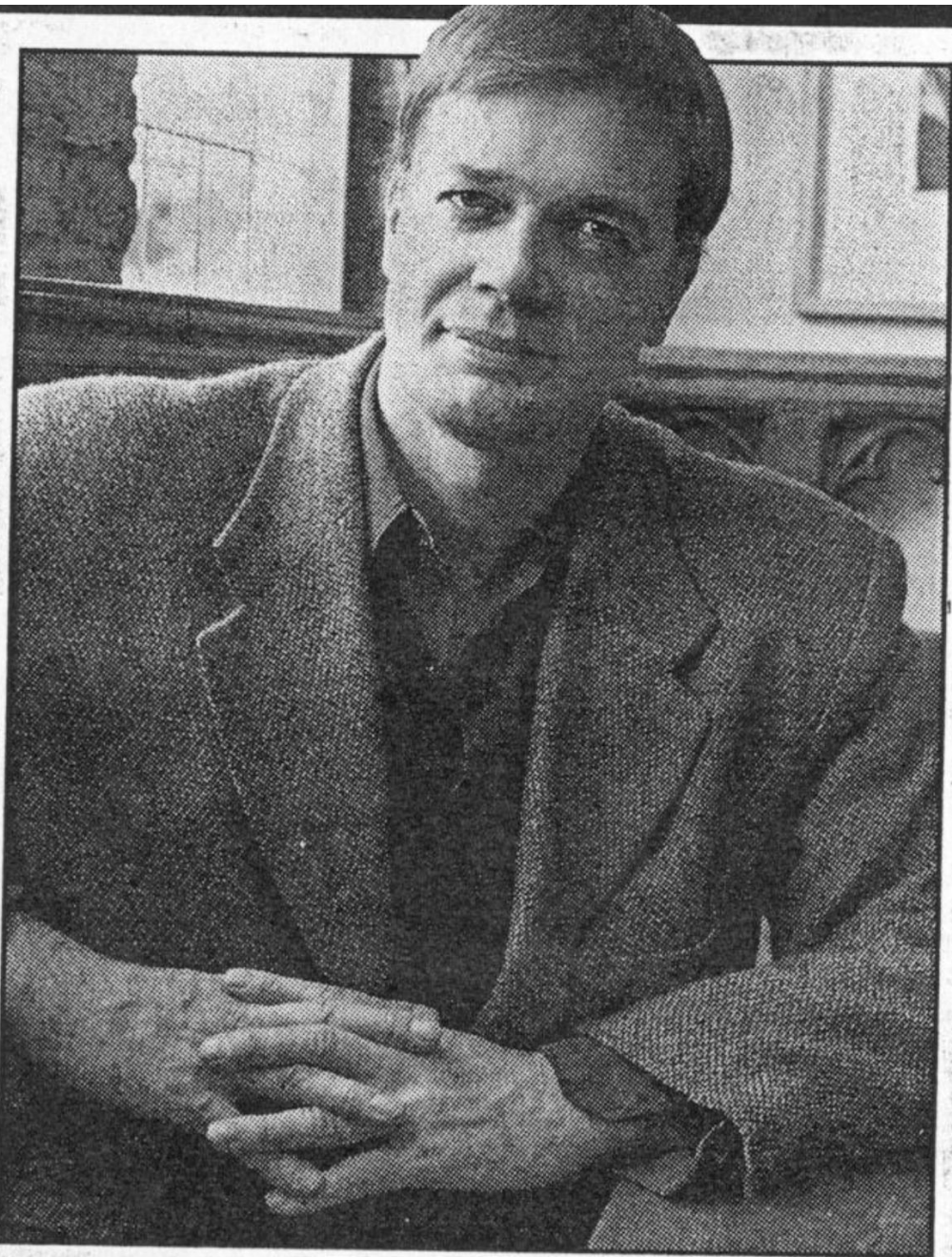
Tests carried out on 12 children with autism and gut disorders

By **Rachel Ellis**

MEDICAL CORRESPONDENT

and with all the published studies that have come from our investigations, parents must at the very least be given a choice of

SINGLE PLEA:
Dr Andrew Wakefield
wants separate
jabs offered



Doctor claims new link between MMR vaccine and child autism

SCIENTISTS opposed to the government's MMR vaccination programme have hit back at their critics with new research that they say links the triple-jab with autism.

Dr John O'Leary, professor of pathology at Trinity College Dublin, claims to have found measles present in the stomachs of children with both autism and bowel disorders. The research suggests a link with the MMR vaccine because the strain of measles found is the same as that used in the vaccine.

The association between MMR vaccine, autism and intestinal inflammation was

Adam Nathan and Rosie Waterhouse

first proposed by Dr Andrew Wakefield, a colleague of O'Leary, in a paper published in *The Lancet* in 1998. This week Wakefield will present the new findings during congressional hearings in America into the safety of the MMR jab.

In January O'Leary published a study that found the measles virus in the guts of 75 children with autism and gut disease. Some 95% of the children had had the MMR jab while the others had had a single measles vaccination.

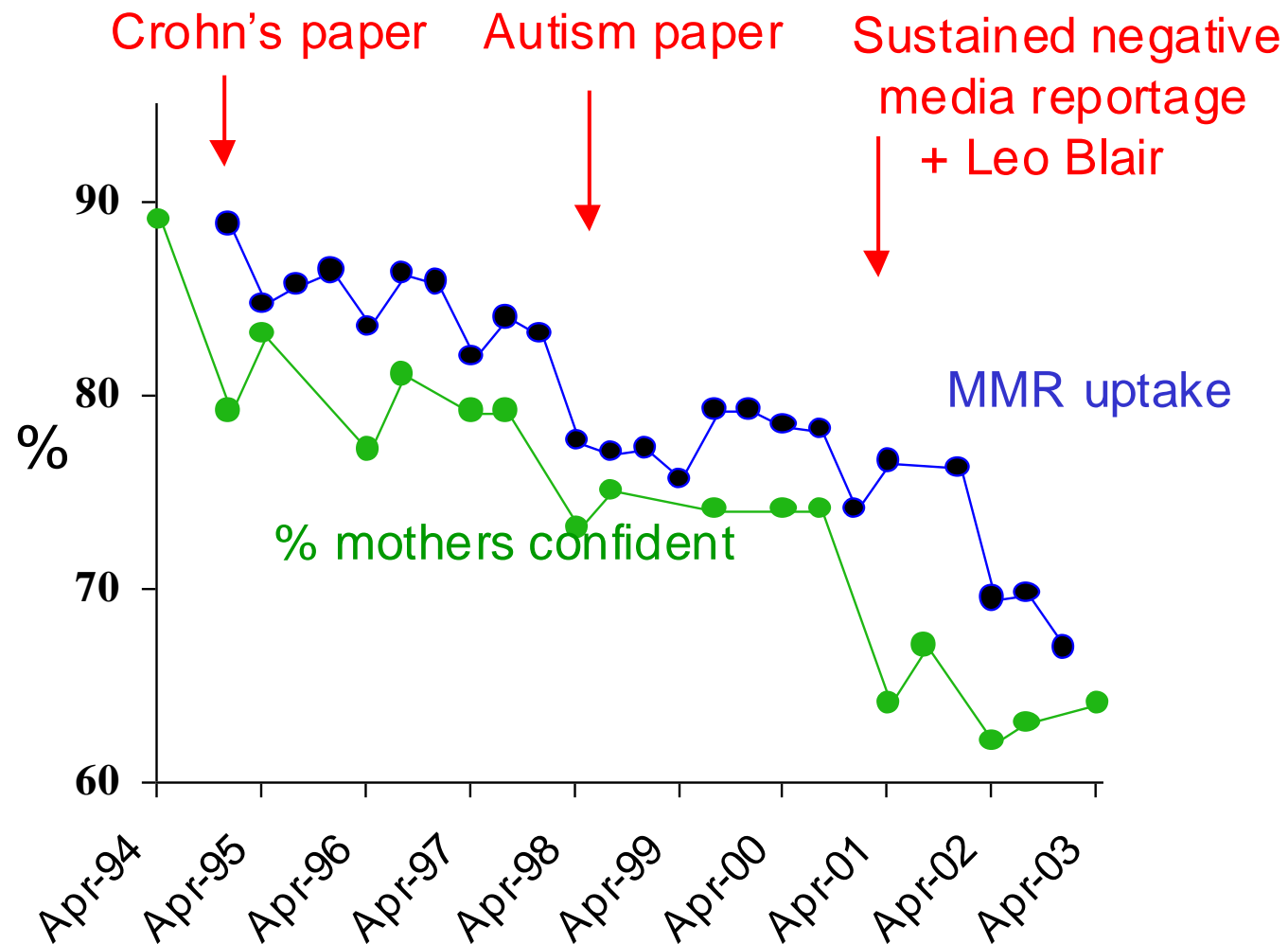
The new study examined molecular material from the intestines of 12 children from the original 75. All were found to contain the strain of measles used in the MMR vaccine.

The Department of Health has vigorously denied any links between MMR and autism. Last week it said the new study was inconclusive. "This study does not prove that the MMR jab caused the conditions these children suffer from," the department said.

Officials point to a study published in the *British Medical Journal* last week — the largest of its kind — which concluded that there was no link between MMR and autism or bowel disorders.

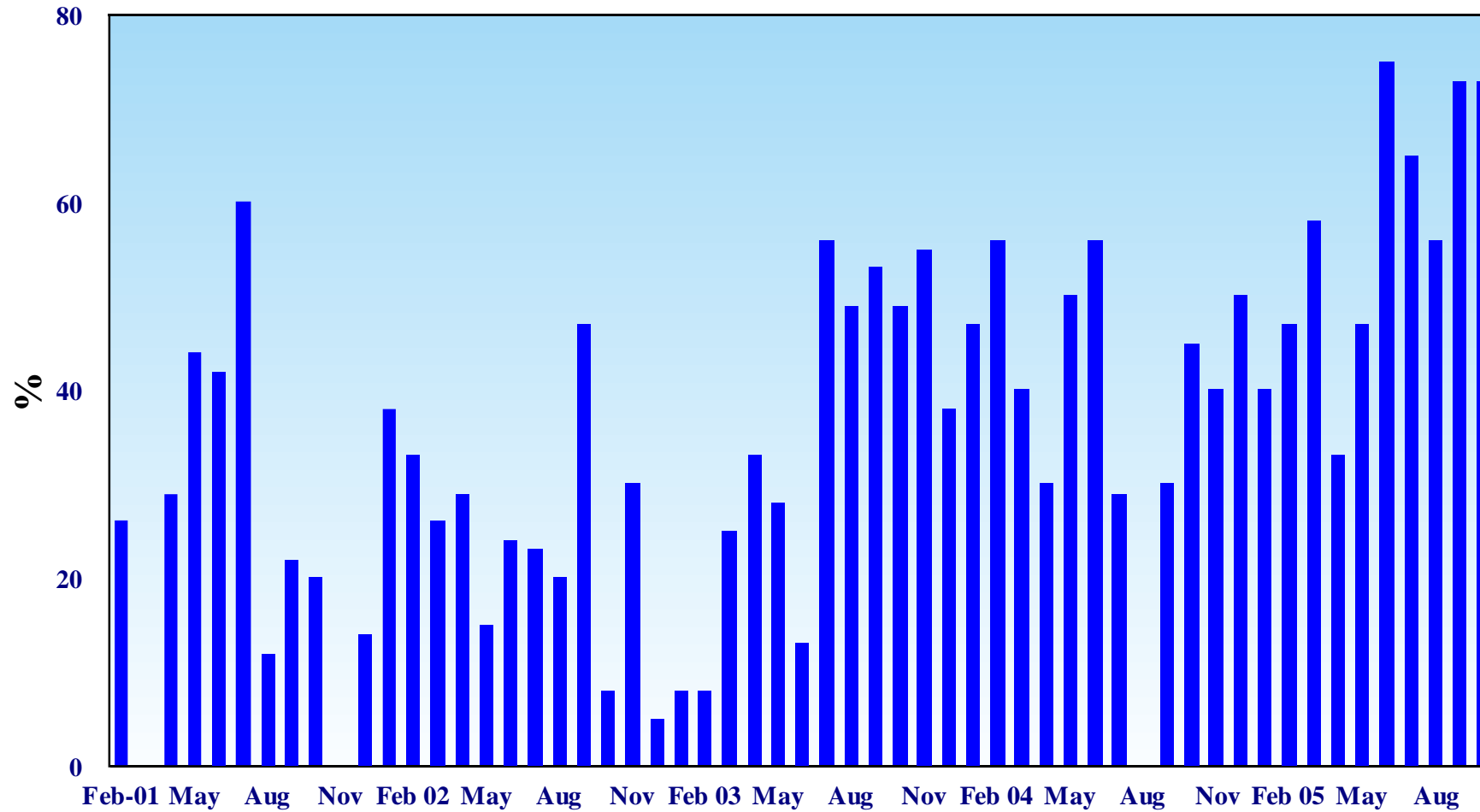
The American congressional inquiry, launched by the Committee on Government Reform into what the chairman Dan Burton has described as an "epidemic" of autism, will also look at the role of mercury preservatives in vaccines. A mercury-based preservative, thiomersal, is used in several commonly used children's vaccines but not the MMR.

MMR uptake at 16 months and proportion of mothers believing in complete or almost complete safety of MMR vaccine

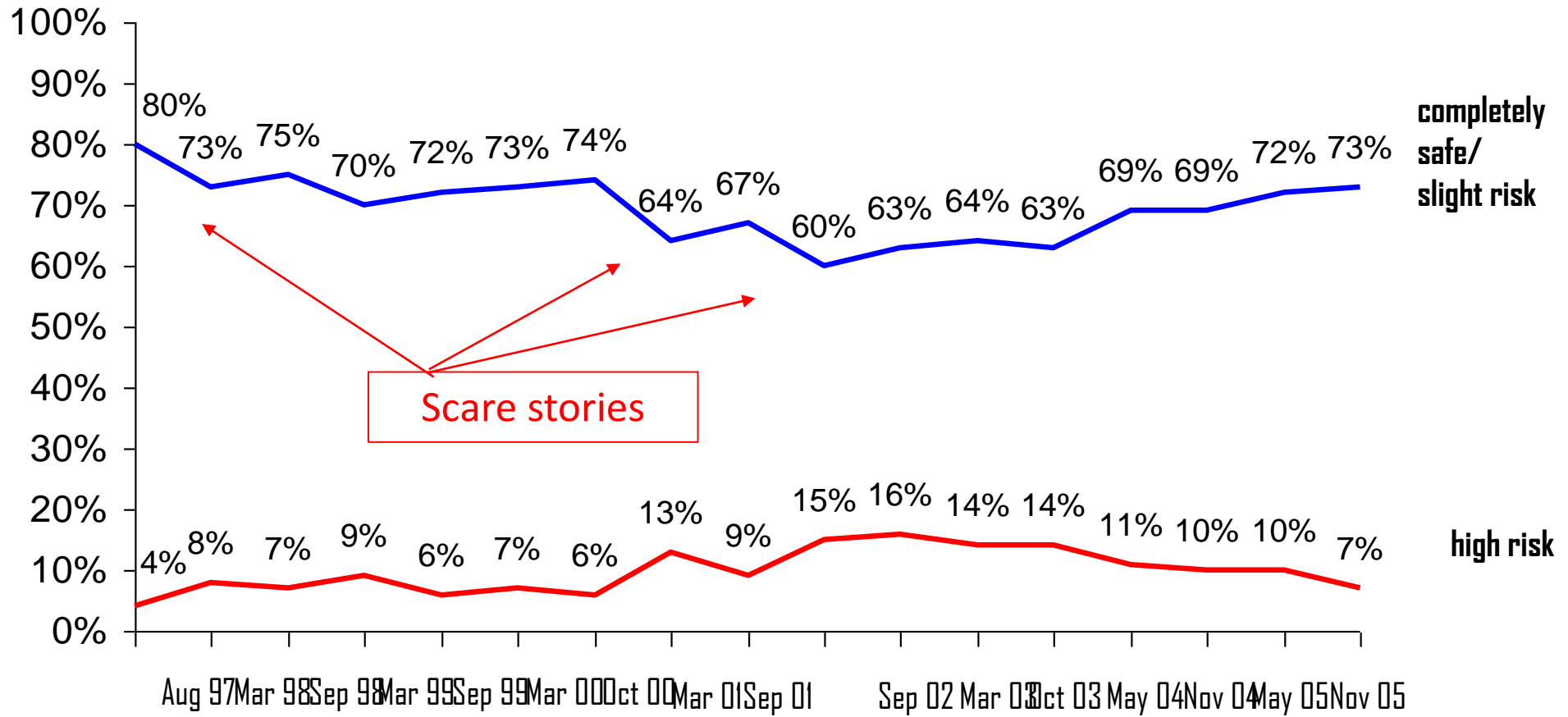




Proportion of media reports scored as 'positive' for MMR; Feb 2001 to Oct 2005.



Perceived safety of MMR



Base: All primary care givers of 0 - 2s (W29 n = 1004)

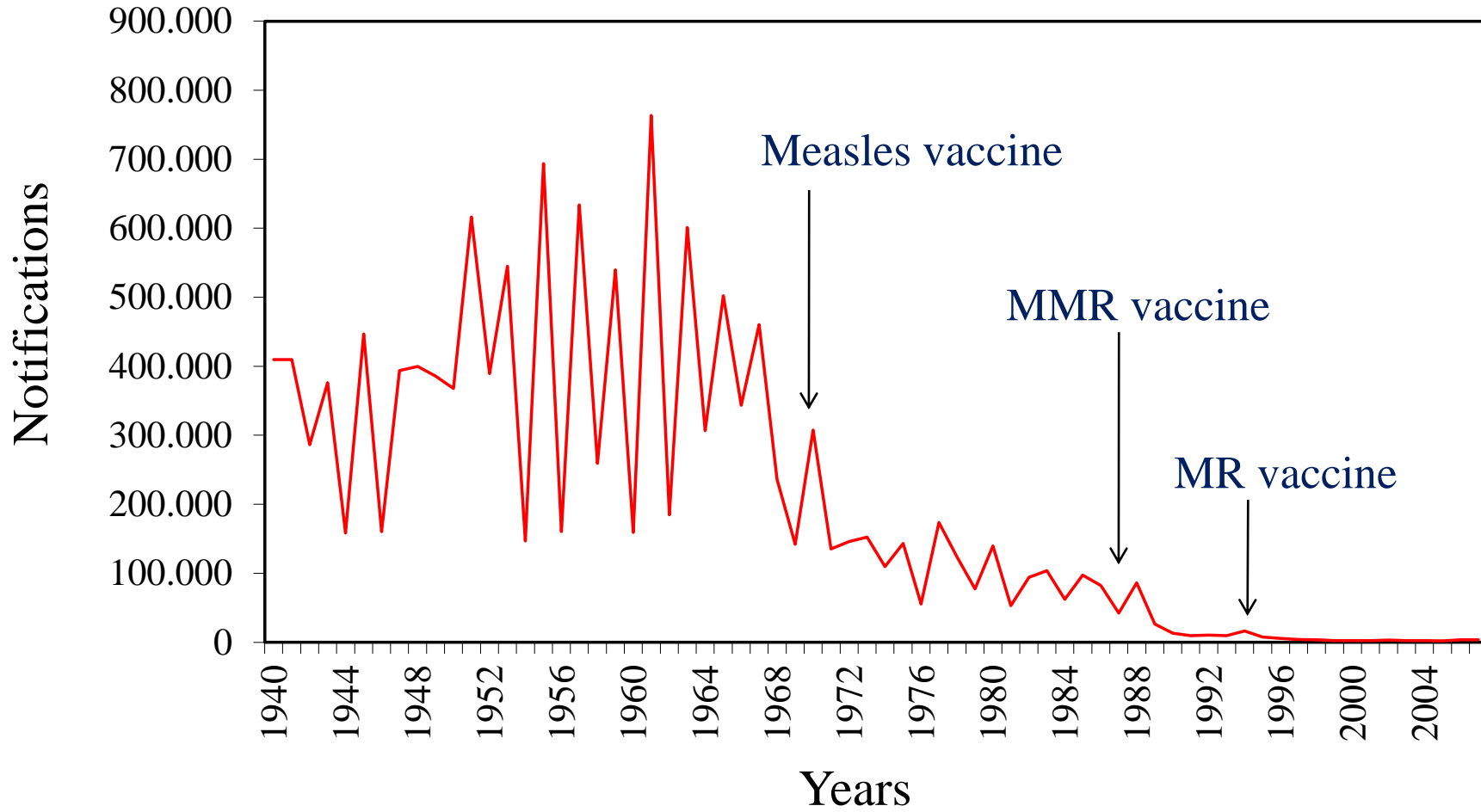



Activities of DH Immunisation Information Unit Jan 2005 - Jan 2006.

- | | |
|--|--------------------------|
| ▶ Conferences (11) | Delegates 51,150. |
| ▶ Health professionals' seminars | 74. |
| ▶ Parents' seminars | 8. |
| ▶ Parents' research | 2,000 interviews. |
| ▶ Health professionals' research | 1,600 interviews. |
| ▶ Leaflets, posters, videos, Factsheets | 8,378,050. |
| ▶ Immunisation.nhs.uk: highest month | 35,741 visits. |
| ▶ MMRthefacts.nhs.uk: highest month | 19,535 visits. |
| ▶ MMR 'Your Questions Answered' | 1,460 |

Notifications from measles 1940 to 2007.

E & W.





The number of children catching measles is increasing. To be protected they should be immunised with the MMR vaccine that also protects against mumps and rubella.

Find out all you need to know about the diseases and the MMR catch-up programme.

Measles, mumps and rubella – the diseases

Find out about measles, mumps and rubella - the diseases that the MMR vaccine protects against.

[Find out more >](#)



FAQs

Your questions about measles and the MMR vaccine answered.

[Find out more >](#)



The MMR vaccine

Get the facts about the MMR vaccine.

[Find out more >](#)



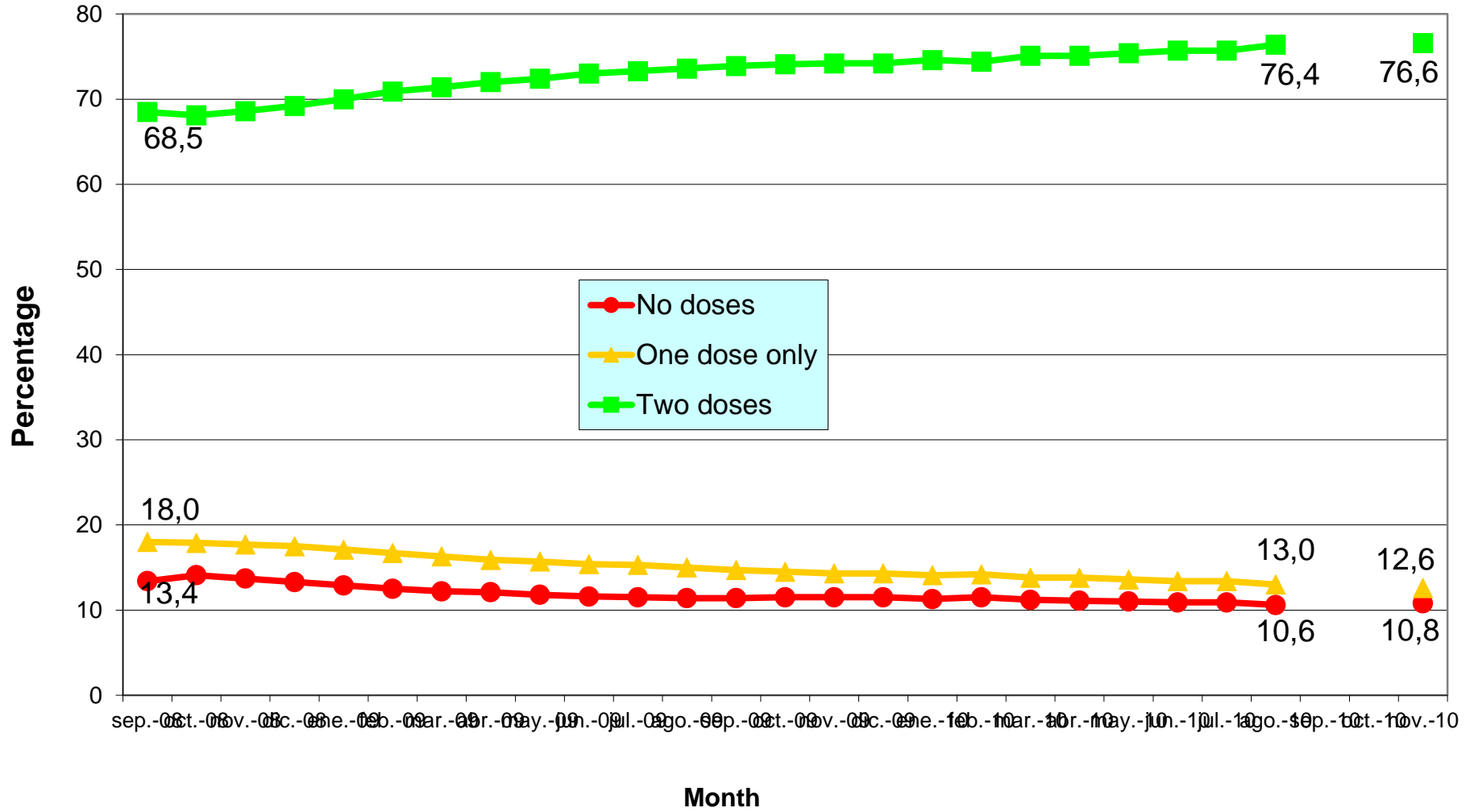
Resources

Find leaflets, factsheets and posters in our resources area

[Find out more >](#)



MMR Catch-up trends (September 2008 to November 2010) 5-18 Year Olds - Sentinel Data



Measles in the UK

3 April 2013 Last updated at 21:53



Measles: Over 500 cases in Swansea epidemic

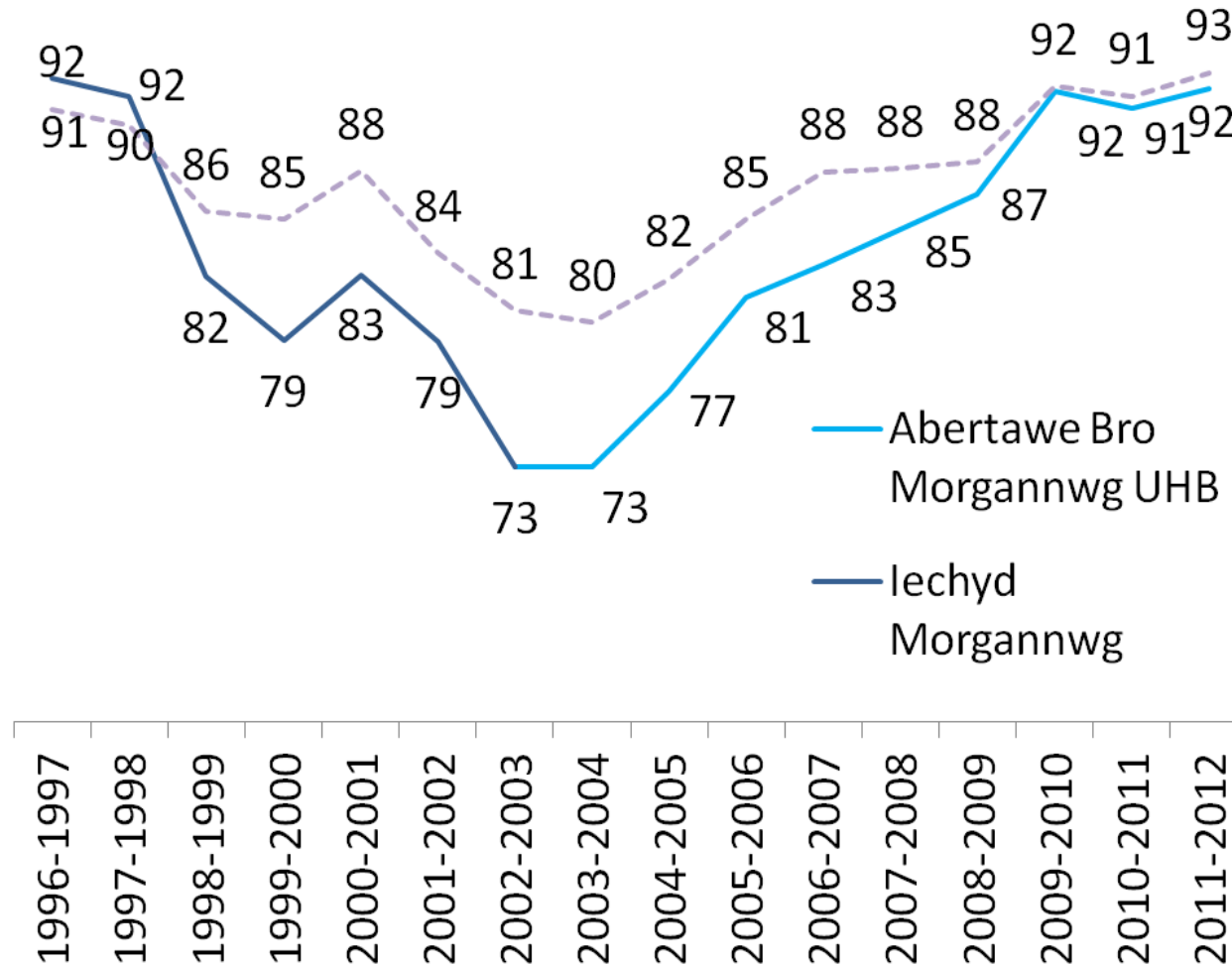


Public Health Wales has renewed its appeal for children to be vaccinated

The number of people diagnosed with measles in an area at the centre of an epidemic has passed the 500 mark, Public Health Wales (PHW) says.

Related Stories

Annual percentage uptake of the first dose of MMR in children aged two years, resident in the Abertawe Bro Morgannwg UHB area (dotted line represents all Wales uptake). Data source: Public Health Wales Annual COVER statistics.



Parents who decided not to take-up MMR at the time were

- more likely to be older and better educated,
- more likely to report being influenced by:
 - Newspapers - aOR 3.07, 95% CI 1.62-5.80],
 - television - aOR 3.30, 95% CI 1.70-6.43,
 - the internet - aOR 7.23, 3.26-16.06
 - and vaccine pressure groups - aOR 5.20, 95% CI 2.22-12.16,
- and less likely to be influenced by:
 - a health visitor - aOR 0.30, 95% CI 0.16-0.57.

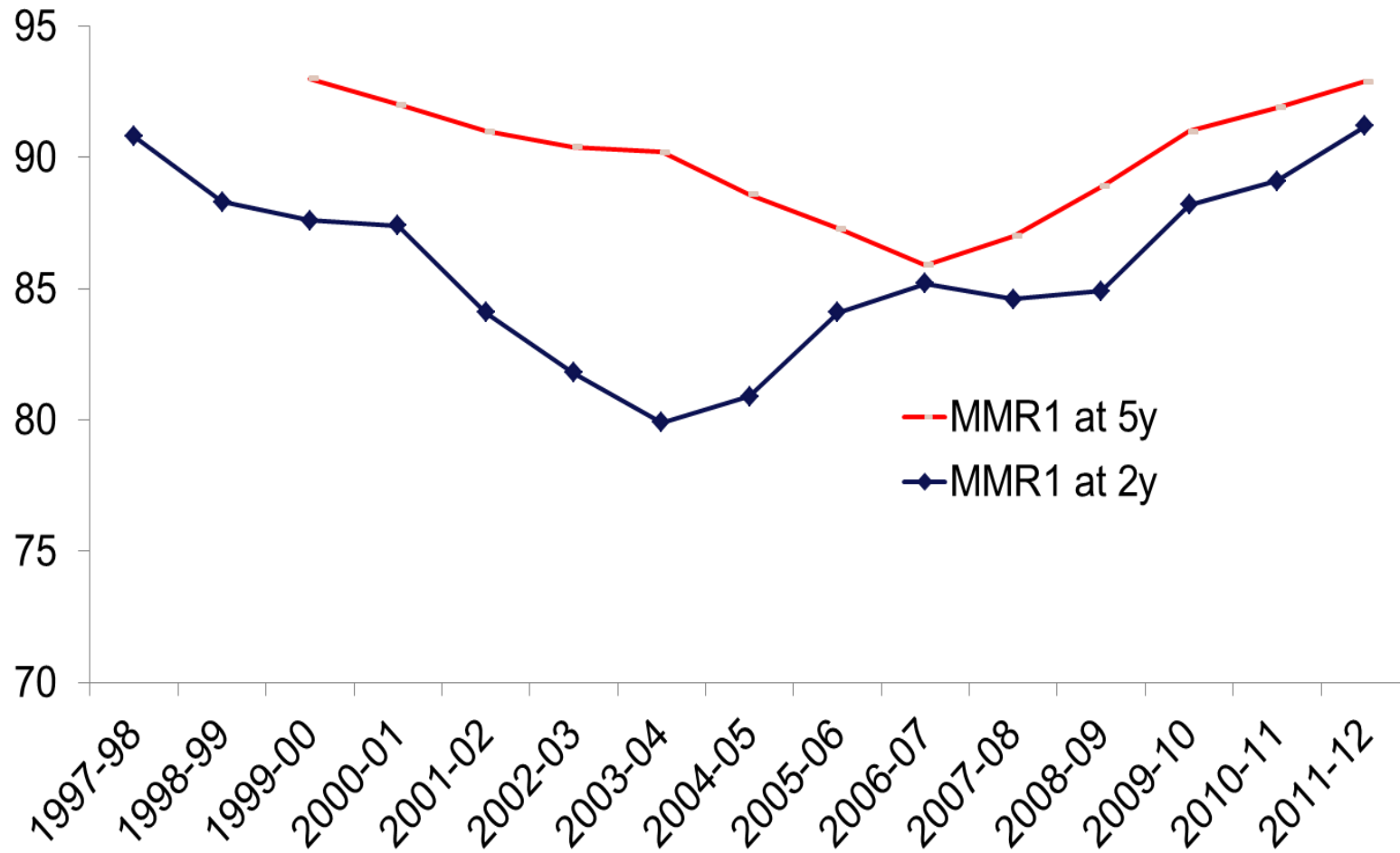
In this area of Wales, daily English-language regional newspapers, UK news programmes and the internet appeared to have a powerful negative influence.

The impact of the media on the decision of parents in South Wales to accept measles-mumps-rubella (MMR) immunization

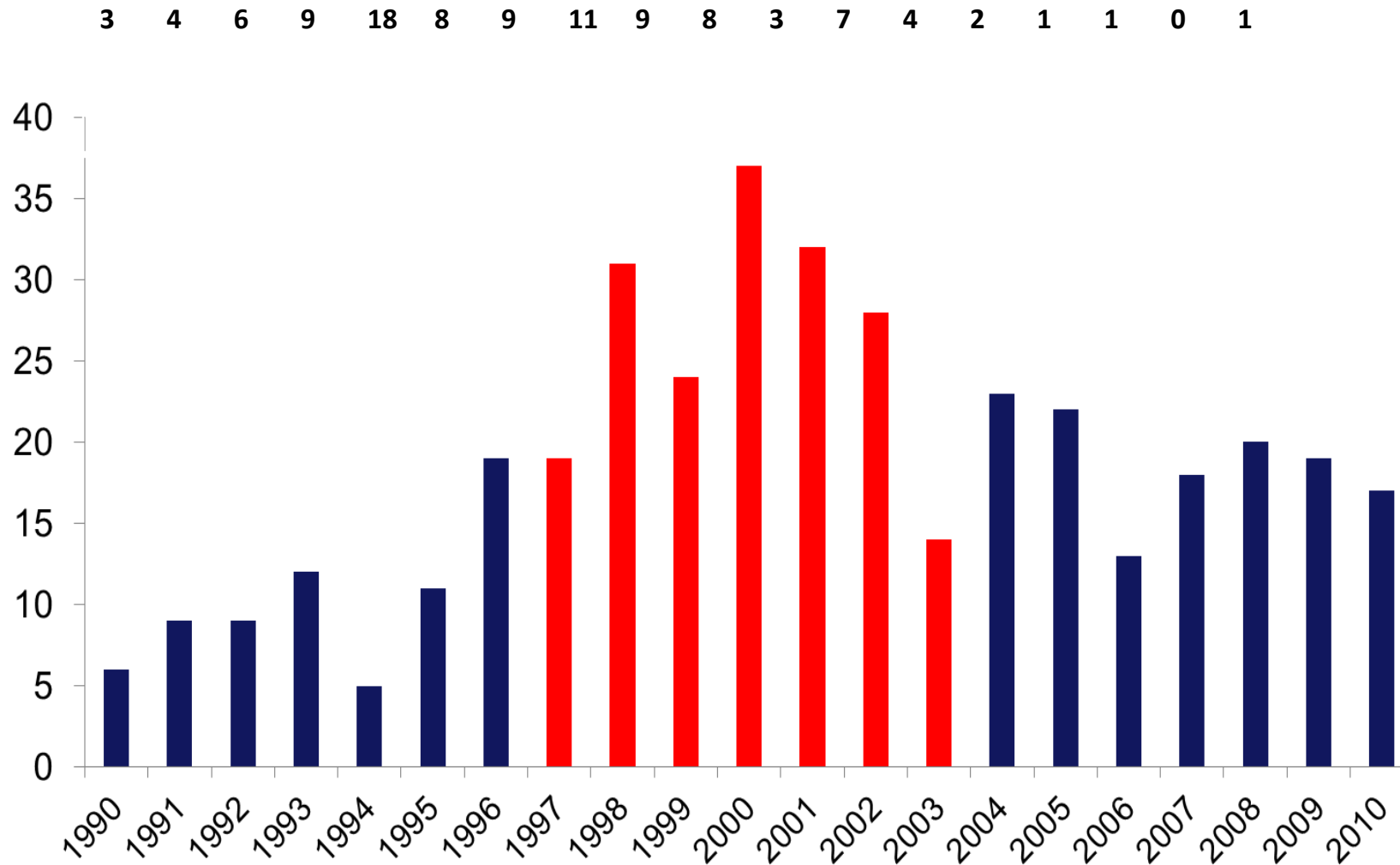
S. WALSH^{a1}, D. Rh. THOMAS^{a1}, B. W. MASON^{a1 c1} and M. R. EVANS^{a1}

[Epidemiology and Infection](#) / Volume 143 / Issue 03 / February 2015, pp 550-560

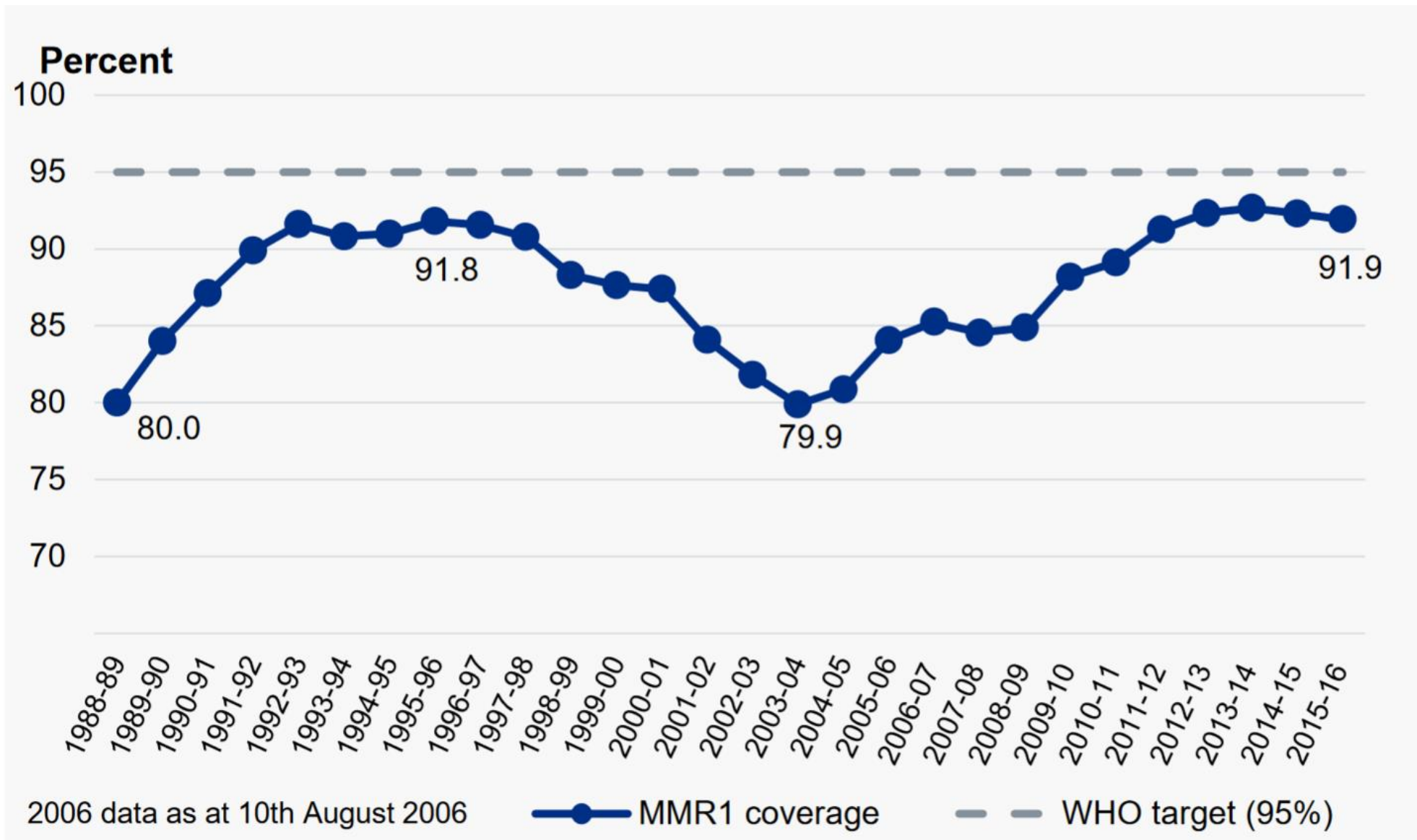
MMR coverage at two and five years of age, England 1997/8-2011/12



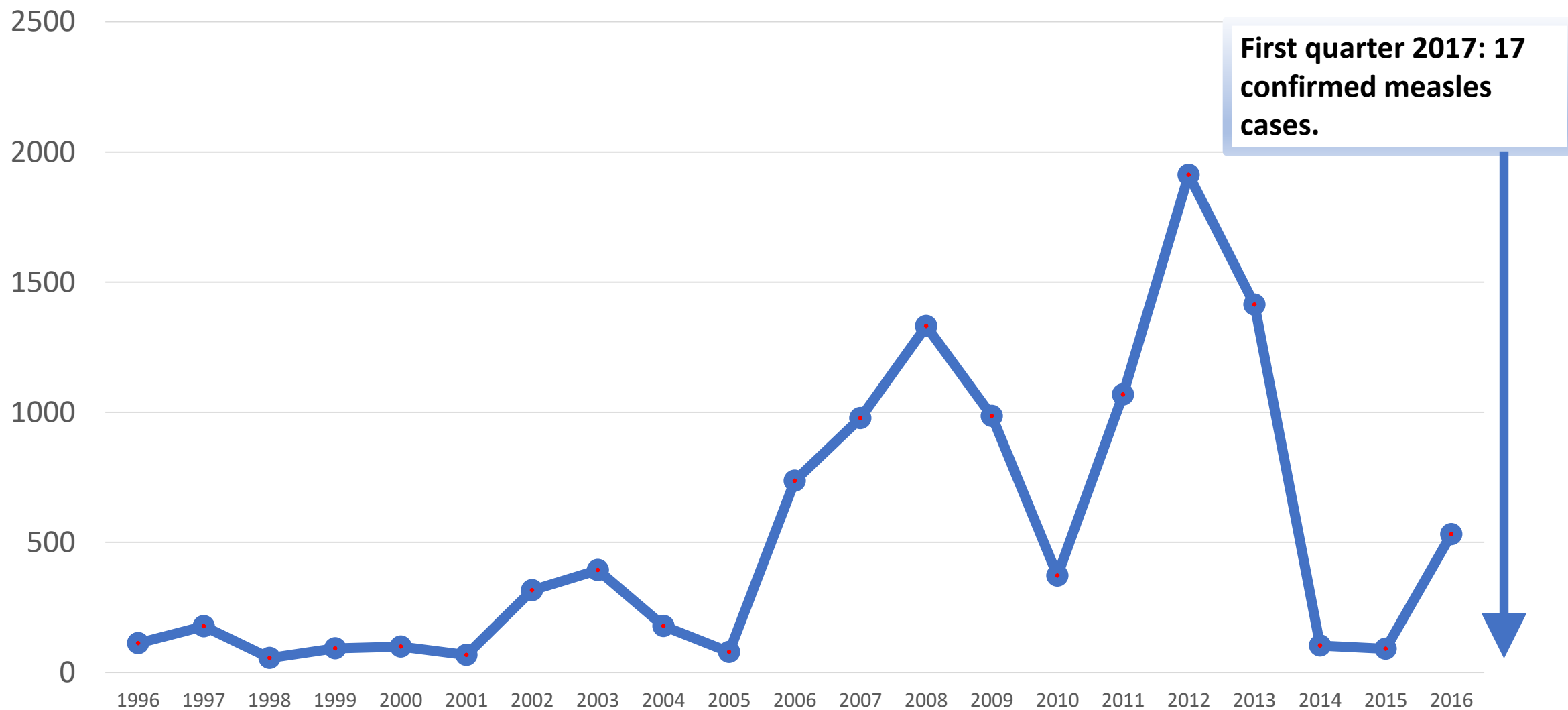
Distribution of confirmed measles cases in England by year of birth, Q1 2013; PubMed citations Wakefield JA



MMR1 coverage England at 24 months; 1988/89 – 2015/16



Numbers of confirmed cases of measles, England 1996-2016.



Guiding principles used by Department of Health

- Prediction
- Preparation
- Proactive efforts
- Positive responses
- Professional and political support

Lecture from June 2002

Prediction

- We have reasonable ideas which topics are likely to attract public interest - thiomersal and mercury toxicity, autism, multiple sclerosis, multiple vaccines and immune overload.
- They share common features of unknown aetiology conditions that the public fears.
- Long latency makes the evidence to negate the claims all the more difficult.
- It will be almost impossible to set up new studies using immunised and unimmunised groups.
- Lack of evidence from those proposing vaccine scares does not appear to hinder them - the public will expect 'authorities' to prove the negatives, or the theories stand unchallenged.

Preparation

- Ideally, the prediction will have identified the forthcoming problem.
- Routine information sources may suffice to give answers: it is more probable that they will not.
- Critical is the phase of intelligence gathering.
- Do adequate data already exist that can answer the problem?
- How feasible is it to collect new data?
- How much can you find out about the cards in the other players' hands?
- Remember that you are starting from behind.
- If you need to set up studies to counteract a scare, it is unlikely that you will have answers in time.
- An answer that we are awaiting new studies does not reassure anybody.

Proactive Efforts

- Uninformed health professionals will undermine your efforts.
- It may be difficult to alert health professionals as promptly as they would wish because of embargoes on publications.
- Doctors hate finding out about vaccine scares from their patients.
- It is not difficult for journalists to find one doctor who will give 'unhelpful' comments, based on ignorance.
- Provide health professionals with multi-layered information, both for themselves and for use with parents.
- Involve independent experts who can endorse your response - share the problem if possible to be able to present a broad coalition.

Proactive Efforts

- Prepare information materials for parents on many levels, for all audiences.
- Give references to parents; they add credibility but are rarely followed up.
- Test all materials for parents and health professionals before you print a million leaflets: - what makes sense to you and looks attractive may be useless in getting the message across.
- Try to find ways to target your information to the right health professionals, and more importantly, to the right parents at the right time.
- If you brief 'friendly' journalists, remember they cherish their independence. They are always going to show both sides, the critical question is where they draw the line.

Positive responses

- Tell the truth.
- Give clear messages.
- Parents want to feel that they are making a choice, but very few will be sufficiently informed to be making a fully 'informed choice'.
- Risk assessment implies rationality that is usually absent.
- Do not offer a choice of risks: replacing one fear with another is unhelpful, ie the traditional dilemma of only small risks from vaccine, but potential big risks from unreal disease.
- Do not patronise - 'We are the experts, so you can believe us'.
- The expertise of anybody called 'Doctor' is considered as credible as anybody else's called 'Doctor'.
- 'Professor' can be a bit tricky - important, but a bit too brainy.

Professional and Political support

- It is essential to recruit a broad coalition of individuals and professional organisations that are credible and trusted.
- Identify individuals who can act as spokespersons from those organisations - in whom you can be confident in what they will say, and how they will say it.
- In UK, we have engaged the full support of paediatric, public health, nursing, and primary care organisations, counterparts from US, Canada, Australia and WHO.
- We have involved media doctors because the public trusts them.
- We have received the strongest political commitment from the Government - that they will accept the professional / technical advice, and give it their full backing.

- The UK has faced intense media pressure on MMR, bowel disease and autism, reaching a crescendo in the first quarter of 2002.
- Every scientific claim has been investigated and referred to independent experts.
- New information materials have been produced for health professionals to use with parents.
- New materials are available for parents with advertising to sign-post parents for access to materials.
- Coverage measured monthly at 16, 20, 24 and 36 months.
- Funding for 20 districts with lowest coverage - after they submit action plans to raise coverage.
- Training sessions for health professionals.
- Only key individuals accept media bids.
- Avoidance of direct confrontation with media.
- Unwavering political support.