

EVIDENCE BASED PUBLIC HEALTH POLICY AND PRACTICE

Mumps and the media: changes in the reporting of mumps in response to newspaper coverage

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Objective: To determine the links between national newspaper coverage of mumps after a press release and increased reports of clinical mumps cases.

Design and setting: A cross sectional study involving people aged 15–24 years in the West Midlands, and England and Wales. Reported mumps cases were obtained from statutory notifications of infectious diseases to the Health Protection Agency and reports to the Royal College of General Practitioners Weekly Returns Service. Data on newspaper coverage was obtained by retrospectively reviewing the Health Protection Agency press archives.

Main outcome measure: The effect of newspaper coverage was assessed by examining the 4 weeks before the press release (weeks 15–18 of the year), a 2-week period that included the week of the press release (weeks 19–20) and 4 weeks after the press release (weeks 21–24).

Main results: Mumps notification rates were declining before increased newspaper coverage. Significant increases in national (from 28.3/100 000 population (95% CI 26.5 to 30.1) in weeks 18 to 42.8 (95% CI 40.6 to 45) in week 20) and local (from 9.8 (95% CI 7.4 to 12.1) to 21.2 (95% CI 17.7 to 24.6)) notification rates were seen after increased newspaper coverage. Reports rapidly declined after decreased media interest.

Conclusions: The reported incidence rate of mumps seems to be markedly influenced by the level of newspaper coverage. This has implications for surveillance activities.

During 2004, the number of reported cases of clinically diagnosed mumps increased dramatically in England and Wales, from 4204 cases in 2003 to 16 436 cases in 2004.¹ These increases were predominantly recorded in 15–24 year old adults because of two factors: (1) there was increased mumps activity in the UK owing to reduced uptake of the measles, mumps and rubella vaccine in the target group of 0–2 year olds; and (2) the 15–24 year age group was particularly susceptible to mumps infection because (a) they either missed the introduction of the measles, mumps and rubella vaccine or (b) only received one of the two required doses.² In the West Midlands region, as in many other regions of England and Wales, the rapid rise in cases continued into 2005. By early February (week 5), cases of mumps in the West Midlands health region had peaked and were declining. However, anecdotal reports suggested a surge in cases of mumps after intense newspaper coverage of a *British Medical Journal* press release issued on 11 May 2005.³ The press release highlighted two articles describing a 2004 UK mumps epidemic, which was identified as mainly affecting people born between 1980 and 1990.^{1,2}

We hypothesised that increased newspaper coverage of the mumps epidemic had affected not only the public's awareness of mumps but also the behaviour of clinicians in diagnosing

cases of mumps. To determine whether changes in newspaper coverage of mumps were associated with increased reports of clinical mumps, we examined two surveillance systems: (1) statutory notifications of infectious diseases (NOIDs) to the Health Protection Agency (HPA); and (2) reports to the Royal College of General Practitioners (RCGP) Weekly Returns Service (WRS). The RCGP WRS is a sentinel network of general practitioners that consists of approximately 80 practices located throughout England and Wales.⁴ The practices report morbidity statistics on every consultation recorded on a weekly basis. The morbidity data are presented as incidence rates per 100 000 population and can be analysed by sex, age (<1, 1–4, 5–14, 15–24, 25–44, 45–64, 65–74 and ≥75 years) and geographical region. NOIDs data record statutory notifications of infectious diseases, as required by law. Doctors in England and Wales have a statutory duty to notify cases of selected infectious diseases, including mumps.⁵ Laboratory confirmation is not required, only clinical suspicion.

METHODS

The effect of newspaper coverage was assessed by measuring changes in the reported incidence rates of clinical mumps in young people aged 15–24 years. We identified the amount of newspaper coverage by retrospectively reviewing HPA press cuttings from daily and weekend national newspapers. Electronic, broadcast and local print media were excluded. We examined the 4 weeks before the press release, a 2-week period that included the week of the press release and a 4-week period after the press release (ie, 11 April 2005 (week 15) to 19 June 2005 (week 24), inclusive). We reviewed all cases of NOIDs for the HPA West Midlands health region, and compared these with NOIDs reports for England and Wales. We calculated population rates using Office of National Statistics mid-2003 population estimates. In addition, episode incidence rates for new cases of mumps were analysed from RCGP practices located in the West Midlands and compared with those from the RCGP WRS for England and Wales. Both surveillance systems are reliant upon passive reporting of cases. Rates for the two systems were compared with the number of newspapers reporting the mumps epidemic during the same period, and 95% confidence intervals (CIs) calculated.⁶ Ethics approval was not required for this study.

RESULTS

Thirteen newspaper articles reporting on the mumps epidemic were identified in week 19 (the week of the press release), four in week 20 and two in week 22. There were no newspaper reports on mumps in weeks 15–18, or in weeks 21, 23 and 24. Mumps notification rates to the HPA were declining before the increased newspaper coverage (fig 1 and table 1). However,

Abbreviations: HPA, Health Protection Agency; NOID, notifications of infectious disease; RCGP, Royal College of General Practitioners; WRS, Weekly Returns Service

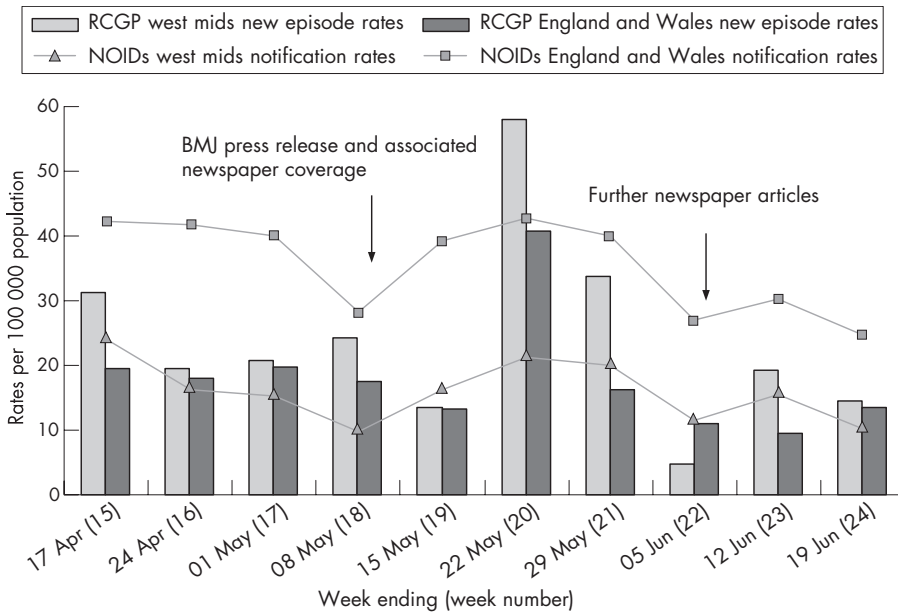


Figure 1 Relationship between newspaper coverage and the reporting rate of clinical cases of mumps in people aged 15–24 years: weeks 15–24 during the year 2005.

significant national (from 28.3/100 000 population (95% CI 26.5 to 30.1) in week 18, to 42.8 (40.6 to 45) in week 20) and local (from 9.8 (95% CI 7.4 to 12.1) to 21.2 (95% CI 17.7 to 24.6)) increases in notification rates were seen after the increased newspaper coverage. Reports to the RCGP WRS also increased over the same period (fig 1 and table 1). Reports to both surveillance systems peaked in week 20, declined considerably by week 22 and increased marginally in week 23 after further, but reduced, newspaper coverage.

DISCUSSION

The reported incidence rate of mumps seems to be sensitive to the level of newspaper coverage. High rates were seen regionally and nationally after intense national newspaper coverage, and an abrupt decline followed decreased newspaper

attention in both areas. This pattern was observed in both systems and although it was more marked for NOIDs data compared with RCGP WRS data, the effect of newspaper coverage on both surveillance systems was seen to correspond closely.

Medical practitioners are acknowledged to be poor reporters of communicable diseases. We believe that the intense newspaper coverage would have increased doctors’ awareness of mumps and led to increased diagnostic suspicion and increased voluntary reporting. Similarly, the increased coverage may have led to parents and adolescents being more likely to present to general practices with symptoms described as “mumps” by the news media. Although it may be postulated that young people may not be directly exposed to news messages, Stryker has suggested that the news media may have a role in generating

Table 1 Relationship between newspaper coverage and the reporting rate of clinical mumps cases in people aged 15–24 years: weeks 15–24 during the year 2005*

	Week ending (week number)									
	17 April (15)	24 April (16)	1 May (17)	8 May (18)	15 May (19)	22 May (20)	29 May (21)	5 June (22)	12 June (23)	19 June (24)
RCGP West Midlands (n)	6	4	4	5	3	12	7	1	4	3
Population	19 200	20 623	19 195	20 649	22 149	20 698	22 174	22 191	22 215	22 239
Episode incidence rate	31.25	19.4	20.84	24.21	13.54	57.98	31.57	4.51	18.01	13.49
95% lower confidence limit	6.24	0.39	0.42	2.99	-1.78	25.17	8.18	-4.33	0.36	-1.78
95% upper confidence limit	56.26	38.4	41.26	45.44	28.87	90.78	54.95	13.34	35.65	28.75
RCGP England and Wales (n)	14	13	14	13	10	30	12	8	7	10
Population	71 391	72 045	70 855	74 147	75 524	73 449	74 839	74 829	75 876	75 102
Episode incidence rate	19.61	18.04	19.76	17.53	13.24	40.84	16.03	10.69	9.23	13.32
95% lower confidence limit	9.34	8.24	9.41	8	5.03	26.23	6.96	3.28	2.39	5.06
95% upper confidence limit	29.88	27.85	30.11	27.06	21.45	55.46	25.11	18.1	16.06	21.57
NOIDs West Midlands (n)	165	111	105	67	111	145	137	78	107	70
Population	684 800	684 800	684 800	684 800	684 800	684 800	684 800	684 800	684 800	684 800
Notification rates	24.09	16.21	15.33	9.78	16.21	21.17	20.01	11.39	15.63	10.22
95% lower confidence limit	20.42	13.19	12.4	7.44	13.19	17.73	16.66	8.86	12.66	7.83
95% upper confidence limit	27.77	19.22	18.27	12.13	19.22	24.62	23.36	13.92	18.59	12.62
NOIDs England and Wales (n)	1438	1419	1358	961	1333	1454	1362	917	1024	845
Population	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900	3 397 900
Notification rates	42.32	41.76	39.97	28.28	39.23	42.79	40.08	26.99	30.14	24.87
95% lower confidence limit	40.13	39.59	37.84	26.49	37.12	40.59	37.95	25.24	28.29	23.19
95% upper confidence limit	44.51	43.93	42.09	30.07	41.34	44.99	42.21	28.73	31.98	26.55
Newspaper coverage (n)	0	0	0	0	13	4	0	2	0	0

n, number of cases/newspaper articles; NOID, notifications of infectious disease; RCGP, Royal College of General Practitioners.

*Newspapers examined: Daily Telegraph, Times, Guardian, Independent, Daily Express, Daily Mail, Daily Mirror, Sun, Star, Sunday Times, Sunday Telegraph, Observer, Independent on Sunday, News of the World, Sunday Mirror, Mail on Sunday, Sunday People and Sunday Express.

What is already known

- It has been hypothesised that media coverage increases reporting of communicable disease events by doctors.
- However, evidence for this is sparse.

What this study adds

- The reporting of clinical mumps seems to be sensitive to levels of newspaper coverage.

health awareness among adolescents through several direct and indirect pathways.⁷ These would include media coverage, parents, teachers, older siblings and friends. Other potential pathways include messages related to mumps obtained via exposure to information campaigns in schools and universities.

Newspapers are acknowledged to be major sources of health information and can generate awareness of health issues through coverage of health-related events such as press releases from medical journals. Although there are few studies on the relationship between newspaper coverage and changes in the reporting of communicable diseases, the findings of this study are similar to those from analyses of media coverage of staphylococcal toxic shock syndrome in the USA.⁸ The extent to which the media influences the behaviour of healthcare professionals with regard to the reporting of communicable diseases through increasing awareness is debatable; however, there is limited evidence of an effect, and research has shown that passive surveillance systems are more likely to be affected than active surveillance systems.⁸

Several limitations are associated with this study. Firstly, the exclusion of other media sources may have an effect on this study. It is recognised that television, radio and print media all followed and reported on mumps during this period, and all probably had some effect on the results reported. In our study, we chose newspaper coverage of mumps, based on the ability to easily access and quantify the amount of newspaper coverage compared with radio or television coverage. However, although each news source may have been accessed to a relatively different degree by different populations, broadcast media tend to follow the same stories as print media and are more effective disseminators of such information.⁹ Secondly, the validity of the results is hampered by the lack of a randomised controlled trial in the research design; however, this was not a feasible option. Thirdly, increased media coverage may have led to information bias as a result of increased diagnostic suspicion or increased voluntary reporting on the part of doctors. Finally, the unit of analysis was any story that contained a reference to mumps during the study period. We did not check for accuracy of content or whether the story contained negative or positive information. We were concerned with the change in the quantity of media coverage over time regarding mumps and its effect on reporting by doctors, rather than the content or quality of the coverage. Despite the limitations of the study, the results consistently and clearly show that media coverage temporally preceded increases in reports of mumps cases. Furthermore, it is unlikely that the findings were the result of chance, as the estimates of effect were marked (table 1) and an apparent dose-response effect was observed.

Statutory notification of infectious diseases relies primarily on clinical diagnosis, and under-reporting of notifiable diseases, such as mumps, is acknowledged to occur in most countries.¹⁰⁻¹⁶ The results of this study suggest that heightened newspaper attention may provide an impetus for doctors to

Policy implications

- The results of this study suggest that heightened newspaper attention may provide an impetus for doctors to translate knowledge into practice more often, and can be an important factor in changing reporting behaviour during outbreaks.
- This has broad implications for surveillance activities, including analysis, interpretation and subsequent public health action.
- Future research should examine in more detail the relationship between the media and the reporting of notifiable communicable diseases.

translate knowledge into practice more often, and can be an important factor in changing reporting behaviour during outbreaks. The relationship between the reporting behaviour of healthcare professionals and newspaper reporting of communicable diseases subject to surveillance is likely to be complex and influenced by a number of factors including the attitude of doctors towards surveillance, clinical interaction with media-sensitised patients, and the effect of other media and information sources. Little is known about the effect of news media stories on the accuracy of passive surveillance systems, perhaps because of factors such as the potential diversity of influences, uncertainties about methods for their analysis and difficulties in interpreting trends. Nevertheless, the results of this study have broad implications for surveillance activities, including analysis, interpretation and subsequent public health action, as they indicate that increases in media reporting preceded increases in disease reporting. Future research should examine in more detail the relationship between newspaper coverage and the reporting of notifiable communicable diseases, as well as the role of other media sources, to gain an understanding of how all forms of news media affect the reporting of communicable diseases.

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SPEAKER'S CORNER

Don Quixotech in New Laputa

There is an island in the Northern Pacific called New Laputa, which floats on air through magnetic levitation. The inhabitants take a rational and empirical approach to reality. Researchers from New Laputa are dedicated to producing categories, classifications, models and techniques in order to conduct increasingly elaborate research.

The principal concerns in New Laputa are now different from those in Old Laputa, where priorities had related to theoretical science, mainly mathematics, astronomy and technology.¹ In New Laputa interest is now focused on scientific research and the production of technologies, in addition to the search for constant improvements in the population's health, as expressed by quality of life and mortality rates.

New Laputa has Quixotech researchers, Babelic librarians and Wilkinsian linguistic analysts. In addition to administering classes and conducting research, they are all devoted to compulsively publishing articles in scientific journals. In New Laputa, whoever fails to publish perishes mysteriously.

There used to be a lower island, located at sea level, called Balnibarbi, where individuals toiled for their own subsistence, and also helped sustain the upper island economically. If they disobeyed, they suffered climate changes as reprisals dealt out by New Laputa.

New Laputa now dominates the planet's entire territory. Radical groups contend that Neo-Laputanism was inspired by Don Quixotech, a character enthused by the technical power and vigour of his instruments for knowledge and reality output.

Such instruments serve not only to act in the world but also to occasionally legitimise certain perspectives as superior and exclude other forms of knowledge from what really mattered—the production of empirical evidence. Sometimes, unconsciously, this way of ordering things sustains the hegemonic ideologies according to powerful New Laputa's interests.

The above parody is inspired by Don Quixote and *Gulliver's travels* to Laputa, Swift's world of science.¹ It also draws on three stories by Borges: (1) *Pierre Menard, author of the quixote*² illustrates replication as essential to the primacy of objectivity; (2) the *Library of Babel*³ is used to represent the eagerness to organise and store information, spawned by the internet and

databases; and (3) *The analytical language of John Wilkins*⁴ presents a disquieting classification originating from a Chinese encyclopedia. It was used by Foucault⁵ in *The order of things* (together with Quixote) to symbolise the demise of the rationality of similitude and the dawn of a view based on the categorical logic of identity and difference.

The allegory calls on one to take a relative view towards radical positions that sustain ideological configurations based on Euro-American metaphysical premises, founded in turn on techno-instrumental formulae that attribute indisputable superiority to proposals for the production of a univocal reality.⁶

We face the complex task of evaluating the real effectiveness of the currently burgeoning scientific output in public health. There are visible excesses in the current emphasis on publishing articles in scientific periodicals as an end in itself, regardless of the expected relationship to effectiveness—that is to real improvements in the population's health.

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