

Hesketh, Andrew Vyse, and Elizabeth Miller of the HPA seroepidemiology unit for providing the samples for this study. The antibody testing was carried out at HPA Porton Down and we thank Moya Burrage, Lorraine Ransley, Carol Powell, Janet Blake, Jenna Plank, and Annette Crowley-Luke from the immunoassay laboratory. We thank our colleagues at the National Reference Laboratory for Bacterial Meningitis, Netherlands, for allowing us to present their recent Hib incidence figures.

Contributors: JM, MPES, and MER obtained and analysed disease incidence data. CLT obtained and analysed sero-epidemiological data. All authors contributed to study design and preparation of the final manuscript. MER is guarantor.

Competing interests: MER and MPES have received research grants from vaccine manufacturers. JM was previously employed in an academic research post that was funded by a vaccine manufacturer. MER, MPES, and JM have all received funds from vaccine manufacturers to attend conferences and meetings.

Funding: The seroepidemiology component of this study was partially funded by the Public Health Laboratory Service Small Scientific Initiatives fund. Surveillance for invasive Hib infections is part of the core work of the Health Protection Agency's Communicable Disease Surveillance Centre and Haemophilus Reference Unit.

Ethical approval: The Health Protection Agency has approval under Section 60 of the Health and Social Care Act to process confidential information about patients for the purposes of monitoring the efficacy and safety of vaccination programmes.

- 1 Health Protection Agency. *Quarterly communicable disease reports on the COVER programme for childhood immunisation*. www.hpa.org.uk/infections/topics\_az/vaccination/cover\_cdr.htm (accessed 11 Aug 2004).
- 2 Trotter CL, Ramsay ME, Slack MPE. Rising incidence of Haemophilus influenzae type b disease in England and Wales indicates a need for a second catch-up vaccination campaign. *Commun Dis Public Health* 2003; 6:55-8.
- 3 Ramsay ME, McVernon J, Andrews N, Heath PT, Slack MPE. Estimating Hib vaccine efficacy in England and Wales using the screening method. *J Infect Dis* 2003;188:481-5.
- 4 Trotter CL, McVernon J, Andrews NJ, Burrage M, Ramsay ME. Antibody to Haemophilus influenzae type b after routine and catch-up vaccination. *Lancet* 2003;361:1523-4.
- 5 McVernon J, Andrews NJ, Slack MPE, Ramsay ME. Risk of vaccine failure after Haemophilus influenzae type b (Hib) combination vaccines with acellular pertussis. *Lancet* 2003;361:1521-3.
- 6 Sarangi J, Cartwright K, Stuart J, Brookes S, Morris R, Slack M. Invasive Haemophilus influenzae disease in adults. *Epidemiol Infect* 2000;124: 441-7.

- 7 Osborne K, Gay N, Hesketh L, Morgan-Capner P, Miller E. Ten years of serological surveillance in England and Wales: methods, results, implications and action. *Int J Epidemiol* 2000;29:362-8.
- 8 Phipps DC, West J, Eby R, Koster M, Madore DV, Quataert SA. An ELISA employing a Haemophilus influenzae type b oligosaccharide-human serum albumin conjugate correlates with the radioantigen binding assay. *J Immunol Methods* 1990;135:121-8.
- 9 National Statistics Online. *Birth statistics: births and patterns of family building England and Wales (FMI)*. www.statistics.gov.uk/StatBase/Product.asp?vlnk=5768&Pos=3&ColRank=1&Rank=144 (accessed 7 Jul 2004).
- 10 McVernon J, Howard AJ, Slack MPE, Ramsay ME. Long term impact of vaccination on Haemophilus influenzae type b (Hib) carriage in the United Kingdom. *Epidemiol Infect* 2004;132:765-7.
- 11 Slack MPE, Azzopardi HJ, Hargreaves RM, Ramsay ME. Enhanced surveillance of invasive Haemophilus influenzae disease in England, 1990 to 1996: impact of conjugate vaccines. *Pediatr Infect Dis J* 1998;17:S204-7.
- 12 Kelly H, Riddell MA, Gidding HF, Nolan T, Gilbert GL. A random cluster survey and a convenience sample give comparable estimates of immunity to vaccine preventable diseases in children of school age in Victoria, Australia. *Vaccine* 2002;20:3130-6.
- 13 Boisivert PL. Familial epidemiology of Haemophilus influenzae, type b, infections. *Am J Dis Child* 1948;427-8.
- 14 Michaels RH, Norden CW. Pharyngeal colonization with Haemophilus influenzae type b: a longitudinal study of families with a child with meningitis or epiglottitis due to H influenzae type b. *J Infect Dis* 1977;136:222-8.
- 15 Barbour ML, Mayon-White RT, Coles C, Crook DWM, Moxon ER. The impact of conjugate vaccine on carriage of Haemophilus influenzae type b. *J Infect Dis* 1995;171:93-8.
- 16 Rijkers GT, Vermeer-de Bondt PE, Spanjaard L, Breukels MA, Sanders EAM. Return of Haemophilus influenzae type b infections. *Lancet* 2003;361:1563.
- 17 European Union Invasive Bacterial Infections Surveillance Network. *Invasive Haemophilus influenzae in Europe, 2002*. www.eubis.org/documents/2002\_hibreport.pdf (accessed 7 Jul 2004).
- 18 Glode MP, Halsey NA, Murray M, Ballard TL, Barenkamp S. Epiglottitis in adults: association with Haemophilus influenzae type b colonization and disease in children. *Pediatr Infect Dis* 1984;3:548-51.
- 19 Leino T, Auranen K, Makela PH, Kaythi H, Takala AK. Dynamics of natural immunity caused by subclinical infections, case study on Haemophilus influenzae type b (Hib). *Epidemiol Infect* 2000;125:583-91.
- 20 Added protection planned against Hib. *Booster vaccine to be offered following increase in cases*. Press release 2003/0071. London: Department of Health, 18 February 2003.
- 21 Ramsay ME, Andrews NJ, Trotter CL, Kaczmarski EB, Miller E. Herd immunity from meningococcal serogroup C conjugate vaccination in England: database analysis. *BMJ* 2003;326:365-6.
- 22 Whitney CG, Farley MM, Hadler J, Harrison LH, Bennett NM, Lynfield R, et al. Decline in invasive pneumococcal disease after the introduction of protein-polysaccharide conjugate vaccine. *New Engl J Med* 2003;348:1737-46.

(Accepted 19 July 2004)

## Bullying among doctors in training: cross sectional questionnaire survey

Elisabeth Paice, Maryanne Aitken, Anita Houghton, Jenny Firth-Cozens

London Deanery,  
London  
WC1N 1DZ  
Elisabeth Paice  
dean director  
Maryanne Aitken  
project manager  
Anita Houghton  
associate dean  
Jenny Firth-Cozens  
special adviser

Correspondence to:  
E. Paice  
epaice@  
londondeanery.ac.uk

BMJ 2004;329:658-9

Workplace bullying is associated with stress, depression, and intention to leave. It is an important issue for the health service because of its potential impact on staff health, retention, and patient care.<sup>1 2</sup> In a recent survey of UK doctors in training, 37% said they had been bullied during the past year.<sup>3</sup> To understand the problem better, we investigated how commonly doctors in training experienced persistent and serious bullying, who were the sources of this behaviour, and what action was taken to deal with it.

### Participants, methods, and results

We conducted a cross sectional questionnaire survey of doctors in training in London north of the Thames, using electronic survey units followed up by postal questionnaire, as described previously.<sup>4</sup> Our sample was defined as all trainees available at the time of the survey in participating trusts. The survey included four

questions on bullying. The stem question, derived from one used by Hicks,<sup>2</sup> was: "In this post, have you been subjected to persistent behaviour by others which has eroded your professional confidence or self esteem?" The analysis of differences between group frequencies was calculated using the  $\chi^2$  test with adjusted residuals.

All 21 hospital trusts and six of the seven community and mental health trusts took part. The response rate overall was 72% (2730/3779), with rates for individual trusts ranging from 40% to 98%. The stem question was answered by 2673/2730 (98%) of respondents, three of whom did not record their sex and five of whom did not record their grade. These

 Five tables of further data about the respondents and their responses are on bmj.com

This article was posted on bmj.com on 15 July 2004: <http://bmj.com/cgi/doi/10.1136/bmj.38133.502569.AE>

included 357 (13%) preregistration house officers, 1124 (42%) senior house officers, and 1188 (44%) specialist registrars. This distribution over-represents pre-registration house officers, who make up 10% of the trainee population. Respondents included 1429 (53%) men and 2090 (78%) UK graduates.

"Yes" responses to the stem question were given by 484 (18%) respondents, ranging from 6% to 38% in different trusts, unrelated to type of trust. A yes response was more likely the more junior the grade (table). The table also shows analysis of who the main source of this behaviour was and whether the respondent had complained (and if not, why not). Only 153 (32%) respondents had complained, with no significant difference between the grades, but we found highly significant differences between the training grades in the source of the behaviour and in the reasons for not complaining. Consultants were the source in 130 (27%) cases, including 43 (54%) of the 80 respondents who were afraid of the consequences of complaining. Yes responses to the stem question were more common in women than men (21% (262/1241) *v* 16% (222/1429)), significantly so among senior house officers, but the pattern was the same. Yes responses were more common among non-UK respondents (21% (120/580) *v* 17% (364/2090)), significantly so among specialist registrars.

## Comment

We found the prevalence of bullying to be lower than previously reported, but the question we used was framed to include only behaviours that were persistent, had a negative effect on respondents, and had occurred in the current post. London has a higher concentration of teaching hospital trusts than other areas of the country, but as we found no correlation between type of trust and the prevalence of bullying, these results are likely to be representative. Most of the negative behaviours were perpetrated by other doctors, in a pecking order of seniority, although nurses and midwives were an important source for junior grades. For bullying to be tackled, trainees need a safe means of complaining. They also need to be made aware of the impact that their own behaviour may have on colleagues. It should be recognised that some of the behaviours that erode trainees' professional confidence or self esteem may be attempts by trainers to improve their performance.<sup>5</sup> An educational rather than a punitive approach is needed to help trainers develop effective ways of encouraging better performance without becoming a source of distress to junior colleagues.

Seniority of trainees and workplace bullying. Values are numbers of respondents (percentage in grade)

Question	Preregistration house officer	Senior house officer	Specialist registrar	Total
<b>In this post, have you been subjected to persistent behaviour by others which has eroded your professional confidence or self esteem? [stem question]†</b>				
Yes	90/357 (25)	225/1123 (20)	168/1188 (14)	483/2668 (18)
<b>If yes, which of the following is the main source of undermining, bullying or harassing?*‡</b>				
Managers	4/90 (4)	16/223 (7)	15/163 (9)	35/476 (7)
Consultants	4 (4)	47 (21)	79 (48)	130 (27)
Other trainees	38 (42)	58 (26)	26 (16)	122 (26)
Nurses or midwives	21 (23)	57 (26)	13 (8)	91 (19)
Patients or relatives	10 (11)	18 (8)	5 (3)	33 (7)
Other	13 (14)	27 (12)	25 (15)	65 (14)
<b>Have you complained to anyone about this?§</b>				
Yes	30/90 (33)	66/224 (29)	57/167 (34)	153/481 (32)
No	60 (67)	153 (68)	107 (64)	320 (67)
Don't know	0	5 (2)	3 (2)	8 (2)
<b>If no, what is the main reason why you have not complained?¶</b>				
Not sufficiently serious	18/59 (31)	50/151 (33)	30/105 (29)	98/315 (31)
Afraid of consequences	10 (17)	35 (23)	35 (33)	80 (25)
Not sure how to complain	6 (10)	11 (7)	5 (5)	22 (7)
Problem will go away	6 (10)	13 (9)	4 (4)	23 (7)
Dealt with it myself	19 (32)	28 (19)	24 (23)	71 (23)
Other	0	14 (9)	7 (7)	21 (7)

A further respondent who answered yes to the stem question did not give her grade, so her details are not included in the analysis in this table.

\*Multiple responses could not be entered. Not all respondents answered every question.

†Pearson  $\chi^2$  test, 27.567; df 2; asymptotic significance (two sided) <0.001.

‡Pearson  $\chi^2$  test, 87.787; df 10; asymptotic significance (two sided) <0.001.

§Pearson  $\chi^2$  test, 2.945; df 4; asymptotic significance (two sided) 0.567.

¶Pearson  $\chi^2$  test, 18.354; df 10; asymptotic significance (two sided) 0.049.

We thank Ray Flux of CivilEyes, who conducted the survey.

Contributors: EP planned the study, analysed the results, and drafted the paper; she is also the guarantor. MA managed the survey and collected the results. AH and JF-C commented on the plans and helped with the final draft.

Funding: No external funding.

Competing interests: The London Deanery is responsible for quality assurance of training in the area concerned.

Ethical approval: Not required.

- 1 Firth-Cozens J. Interventions to improve physicians' well-being and patient care. *Soc Sci Med* 2001;215-22.
- 2 Hicks B. Time to stop bullying and intimidation. *Hospital Medicine* 2000;61:428-31.
- 3 Quine L. Workplace bullying in junior doctors: questionnaire survey. *BMJ* 2002;324:878-9.
- 4 Paice E, Aitken M, Cowan G, Heard S. Trainee satisfaction before and after the Calman reforms of specialist training: questionnaire survey. *BMJ* 2000;320:832-6.
- 5 Paice E, Firth-Cozens J. Who's a bully then? *BMJ* 2003;326(suppl):S127. <http://carefocus.bmjournals.com/cgi/content/full/326/7393/S127>

doi 10.1136/bmj.38133.502569.AE

## A grateful patient

An ageing Irish farm labourer entered my consulting room, sat down by my desk, and extracted a £5 note from his wallet and placed it before me saying, "Doctor, that's for you. Do you remember me?"

Well, yes, I did remember him, although I had seen him only once before, about 18 months previously, when he had consulted me about a back injury at harvest time. He had fallen from a corn stack, and continuing pain had made him query an initial diagnosis of simple strain and seek another opinion. I had referred him to our local orthopaedic unit, where an x ray

showed a crushed lumbar vertebra. He was treated with bed rest and later discharged to his home in Ireland.

"But," I protested, "I didn't do anything to deserve this."

"Doctor," he said quietly, "when I came to you, you arranged for me to have an x ray, and because of what that showed I was entitled to compensation. I got my compensation a few weeks ago, and, doctor, that's for you."

During my time in practice, I received many gifts from patients but, to me, nothing so precious as this Irishman's note.

Robert Milne *retired general practitioner, Perth*