

Occupational health provision in UK universities

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Background	Very few studies have been done of occupational health provision across an entire employment sector and universities are particularly understudied. The British government published updated guidance on university occupational health in 2006.
Aim	To describe the occupational health services to all the universities in the UK.
Methods	All 117 universities in the UK were included. Detailed surveys were carried out in 2002, 2003 and 2004 requesting self-completed information from each university occupational health service. This paper presents information on general characteristics of the service, staffing, services provided and outcome reporting.
Results	There was variation in the type of occupational health provision; half the universities had an in-house occupational health service, 32% used a contractor, 9% relied on the campus primary care or student health service and 9% had <i>ad hoc</i> or no arrangements. In all, 93 of the 117 (79%) universities responded to the detailed questionnaire, the response rate being higher from in-house services and from larger universities. There was a wide variation in staffing levels but the average service was small, staffed by one full-time nurse with one half-day of doctor time per week and a part-time clerical or administrative member of staff. A range of services was provided but, again, there was wide variation between universities.
Conclusions	It is unclear if the occupational health provision to universities is proportional to their needs. The wide variation suggests that some universities may have less adequate services than others.
Key words	Health services research; higher education; occupational health provision; occupational health services; universities.

Introduction

Occupational health provision in the UK does not form part of the National Health Service (NHS), unlike provision for health protection, primary care and secondary care. Nor does British employment or health and safety law place an explicit duty on employers to provide or procure an occupational health service to protect the health of employees. Furthermore, there is no certification system in the UK for these services and no external monitoring of standards. There is, therefore, no guidance for employers to follow (or challenge) and occupational health provision has largely been outside the major movements in recent years towards audit, evidence-based practice and monitoring of service standards.

This survey of occupational health provision in universities was prompted initially by the difficulties that

occupational physicians in the university sector were experiencing in making a case to university managers for delivering a wider range of services or for more occupational health staff to deliver services. The Higher Education Funding Council, the government agency which disburses core funding to universities, accepted the importance of good occupational health provision by funding this research under its Good Management Practice initiative. A review carried out as part of this research has shown that universities are large organizations which include complex environments with a wide range of hazards, especially in research [1]. Research hazards included, for example, clinical environments, animal facilities, potentially infectious material in laboratories and overseas fieldwork, which can all be assumed to require professional occupational health input to the development of preventive policies and the delivery of preventive services. In 2003–04, universities in the UK employed 338 100 staff and included 2 247 400 students. Students, as well as staff, require occupational health services and some groups of students (such as medical students or postgraduate students undertaking laboratory research) can be assumed to

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require a similar level of occupational health input as the staff in the same academic department.

The only available national guidance for the UK was originally published in 1991 by the Health and Safety Commission, the government agency responsible for health and safety regulation, and was not prescriptive in its approach [2]; revised guidance was published in 2006 and focuses on occupational health needs rather than staffing and services [3]. The first step in answering the question 'what level of provision is adequate' clearly needed to be a description of the current situation in the sector as a whole and of any variation between universities.

As well as being of local interest, the lack of explicit regulation on occupational health services means that research in the UK can provide information about employer behaviour which is impossible to obtain in other countries where employers are obliged by law to provide a service. This is because a survey of occupational health provision in an unregulated country provides insights into the investment employers are prepared to make, whereas a similar survey in a regulated country provides insights into compliance with the law, which may have different determinants. Although employer investment priorities can be expected to vary between countries, they are probably sufficiently similar for the research to be generalizable, at least to other developed countries.

Methods

As of August 2004, we identified 90 publicly funded universities and a further 27 constituent parts of federal universities which are treated as distinct entities by funding and regulatory bodies. More information on the university sector in the UK is provided in a separate paper [1]. The Higher Education Statistics Agency (HESA) provided copies of the HESA Finance Record 2003–04, the HESA Student Record 2003–04 and the HESA Staff Record 2003–04 from which we abstracted total university income, total number of staff and total number of students.

A questionnaire covering a wide range of aspects of the service was devised for completion by the lead clinician of each university occupational health service. A database of lead clinicians was created after telephone enquiries prior to the first survey and updated before each subsequent mailing. Many universities also had student health or primary care services but these were not included and any dual-function services responded in relation to their occupational health role. It was initially hoped to study changes in provision over time, so the survey was repeated in the academic years 2001–02, 2002–03 and 2003–04. In 2003–04, respondents could also respond online via the project website. To increase response, up to four follow-up telephone calls or emails were made following each survey and the surveys were publicized

by means of email discussion lists and relevant professional meetings.

There were no changes in provision over this short timescale, so a compiled data set was created using, for each university, the most up to date information from the three surveys. This paper presents the survey's main data on staffing and activities. Data on the lead clinician's perception of the main hazards or other occupational health concerns in universities, on committee involvement and on the topics of recent occupational health policy documents are presented elsewhere [1,4]. The remainder of the data are available from the annual reports on the project website (<http://www.dphpc.ox.ac.uk/ohshe/>).

Full-time equivalent (FTE) was calculated from reported hours worked per week using a baseline of 40 h/week for doctors and 37.5 h/week for nurses and administrative and clerical staff. When information was missing for doctors, an assumption was made that the number of half-days of work was about one a month and the figure 0.025 FTE was assigned. This assumption was made after considering the available survey data for comparable universities and after discussion with occupational physicians providing a service to universities. No assumptions were made for nurses. For this paper, a 'qualified' occupational physician was defined as a doctor reported to have the Associateship, Membership or Fellowship of the Faculty of Occupational Medicine of the Royal College of Physicians [5]. A qualified occupational health nurse was defined as one reported to have an occupational health qualification recorded with the Nursing and Midwifery Council [6].

All universities were contacted in 2002–03 and 2003–04, initially by mail with follow-up by telephone, to categorize their service into the following: (i) full 'in-house' service in which the university employed a doctor, nurse and administrative support; (ii) partial in-house service with an employed nurse and support staff but an externally contracted doctor; (iii) a 'contractor' service from an NHS trust working on-site; (iv) a contractor service from an NHS trust at the trust premises; (v) a contractor non-NHS service working on-site; (vi) a contractor non-NHS service at their own premises; (vii) service from a primary care or student health service; (viii) *ad hoc* arrangements and (ix) no service. Type of occupational health provision was grouped into three for some analyses: in-house, contractor and 'other'. SPSS version 13.0 was used for the analysis. The study did not collect data on individuals and ethics approval was not required.

Results

Table 1 shows that 50% of universities had an in-house service, fully (15%) or in part (34%), and 32% purchased services from a contractor, either an NHS provider (20%) or another provider (13%). In universities without an

occupational health service, a primary care or student health service provided some support in 9%, and a further 9% had *ad hoc* or no arrangements.

Ninety-three universities returned at least one questionnaire (Table 1). Data from HESA showed that the responder universities had a higher total income and greater numbers of both staff and students than non-responders. The response was better from in-house services (90% of 58) than from contractors (76% of 38) and other types of occupational health providers (57% of 21). Five of the 24 non-responder universities shared the same external occupational health provider.

Table 2 shows the varying ages and genesis of university occupational health services. Sixteen per cent of respondents reported providing a service to at least one other higher education institution (not necessarily a university). Only 23 services reported undertaking some external work on a commercial basis; the income generated was small and mainly reinvested in the occupational health service. Thirty-four per cent of services were, at the time of the research, led by a doctor and 57% by a nurse.

Table 3 shows that most services employed at least one doctor and 34% employed two or more. Eight had no access to a doctor. Eighty-two per cent of universities

had access to at least one doctor with occupational health qualifications. Many of the doctors worked part-time and the median (range) of FTE for doctors was only 0.09 (0–3.25). Figure 1 shows that the variation between universities in doctor FTE was considerable, even allowing for variations in numbers of staff. The median (range) of FTE for doctors per 10 000 staff was 0.36 (0.0–28.46).

Most services employed at least one nurse and 52% employed two or more. Eleven reported no access to a nurse. Sixty-seven per cent reported access to at least one nurse who had recorded a qualification in occupational health with the Nursing and Midwifery Council. The median (range) of FTE for nurses was 1 (0–7.9) and Figure 1 shows, as for doctors, considerable variation between universities. The median (range) of FTE for nurses per 1000 staff was 0.43 (0.0–6.89).

Most (73%) services reported at least one member of administrative or clerical staff and 30% employed two or more. However, 28% had no administrative/clerical staff. The median (range) of FTE for administrative/clerical staff was 0.67 (0–5.81).

Table 3 also shows that a wide range of other services was available, at least in some universities. The most

Table 1. University size, type of occupational health provision, and response of the occupational health service to the survey

	Response of the occupational health service to any of three surveys	
	Yes	No
Universities	93	24
Median total university income 2003–04 (in thousands of pounds) ^a	115 170	62 754
Median total number of staff 2003–04 ^a	2436	1125
Median total number of students 2003–04 ^a	17 845	8451
Type of occupational health provision 2002–03, n (%) ^b		
Full in-house	15 (16)	3 (13)
Partial in-house	37 (40)	3 (13)
Contracted NHS on-site	11 (12)	2 (8)
Contracted NHS off-site	6 (6)	4 (17)
Contracted non-NHS on-site	5 (5)	3 (13)
Contracted non-NHS off-site	7 (8)	0 (0)
Primary care or student health service	8 (9)	3 (13)
<i>Ad hoc</i> provision	4 (4)	5 (21)
No occupational health service	0 (0)	1 (<1)
Total	93 (100)	24 (100)

^aData from HESA.

^bData reported by universities.

Table 2. Reported general characteristics of the occupational health service

	Number (%)
Number of years the university has had an occupational health service	
<2	4 (4)
2 to <5	11 (12)
5 to <10	15 (16)
10 to <15	24 (26)
15 to <20	6 (6)
20+	12 (13)
Missing	21 (23)
Genesis of the occupational health service	
Student health service	33 (36)
Safety office	24 (26)
Human resources department	14 (15)
Primary care	5 (5)
Other	3 (3)
Missing	14 (15)
Provision of services to other higher education institutions	
Yes	15 (16)
No	66 (71)
Missing	12 (13)
External commercial work	
Yes	23 (25)
No	60 (65)
Missing	10 (11)
Leadership	
Doctor	32 (34)
Nurse	53 (57)
Missing	8 (9)
Total	93 (100)

Table 3. Reported clinical staffing of university occupational health services

	Number (%)
Doctors	
None	8 (9)
One	53 (57)
Two	18 (19)
Three or more	14 (15)
Doctor FTE	
None	8 (9)
<0.1	42 (45)
0.1 to <0.2	19 (20)
0.2 to <1.0	17 (18)
≥1.0	7 (8)
At least one doctor with occupational health qualifications	76 (82)
Nurses	
None	11 (12)
One	34 (37)
Two	21 (23)
Three or more	27 (29)
Nurse FTE	
None	11 (12)
<1	26 (28)
1 to <2	29 (31)
2 to <3	11 (12)
≥3	11 (12)
Incomplete data	5 (5)
At least one nurse with occupational health qualifications	62 (67)
Reported university access to other clinical or specialist staff	
Counselling	43 (49)
Disability advice	33 (38)
General practice	22 (37)
Optician	16 (18)
Occupational hygiene	15 (17)
Travel medicine	15 (25)
Ergonomics	14 (16)
Dentistry	14 (24)
Psychology	12 (14)
Physiotherapy	12 (19)
Sports medicine	10 (16)
Psychiatry	9 (15)
Dentistry	6 (6)
Total	93 (100)

common was counselling; 46% (43 of 93) of universities reported access to counselling, either within the occupational health service (12) or elsewhere in the university (31).

Table 4 shows that these occupational health services accepted the range of individual referrals which is common in occupational health practice in the UK. They were using their medical and nursing staff for different purposes; for example assessments on suitability for ill-health retirement were handled mainly by doctors and travel advice mainly by nurses.

Most (79, 85%) offered a generic pre-employment health assessment service for all staff but only 12 (13%)

offered a generic pre-entry health assessment service via the occupational health service (as opposed to any primary care of student health service) for all students. Table 5 shows that a diverse range of targeted pre-employment health assessments and statutory health surveillance was carried out, reflecting the hazards or other issues relevant to specific working groups. The respondents also offered a range of workplace assessments. Sixty-one per cent of services provided service activity data (57 of 93) to the university and more than half provided an annual report (49 of 93).

Discussion

This survey found that 82% of universities reported an in-house or contracted occupational health service during 2001–04. On the surface, this appears to be similar to other UK employers: the Institute of Occupational Medicine's telephone survey of a representative sample of employers in the UK found that three-quarters of large companies (those with 250 employees or more) had some form of occupational health coverage [7]. However, many universities have complex needs because of the hazards associated with research and the presence of specific groups, such as medical students [1], so that the finding that almost one in five universities in the UK do not have formal arrangements for occupational health provision must be a cause for concern.

We are aware of only one comparable survey of occupational health provision in a complete employment sector in the UK or elsewhere. Hughes *et al.* [8,9] surveyed occupational health provision in all NHS organizations in England and Wales in 1998 and again in 2001. In 1998, only 0.4% of NHS organizations had no occupational health service and 64% of NHS hospitals had an in-house service.

The median university occupational health staffing in the respondent universities comprised one nurse, one half-day per week of doctor time and part-time administrative and clerical support. Because the better provided universities were more likely to respond, the true median staffing must be smaller. At face value, this staffing appears very low in proportion to need, summarized elsewhere [1]. Comparing the university sector to health care, 31% of NHS services reported at least 1 FTE doctor time, compared to only 8% of university services [8]. In NHS services, 40% reported at least 3 FTE of nurse time, compared to only 14% of universities [6]. The ~3-fold disparity in staffing was unlikely to be completely explained by differences in size because the median employee numbers were 3200 (health care) and 2436 (universities). The disparity is probably even greater because university occupational health services also cover medical students and other students undertaking high-risk research or practice.

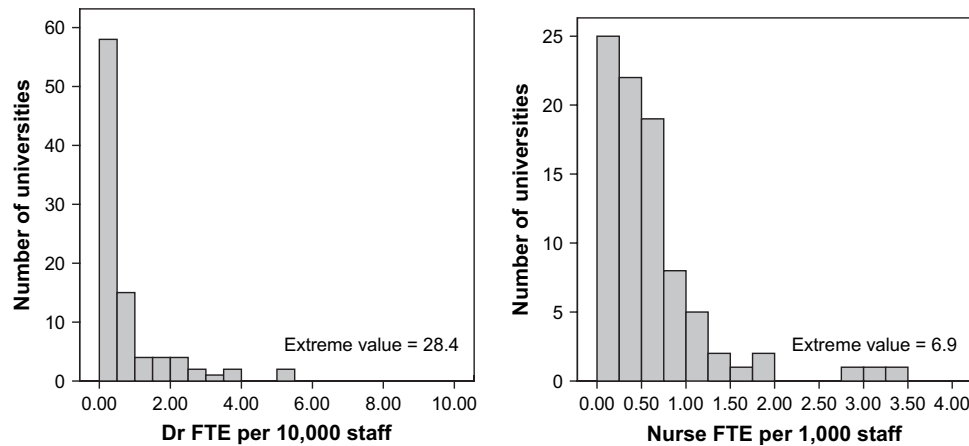


Figure 1. Variation in occupational health service staffing in universities, adjusted for numbers of university staff.

There was a wide range in occupational health staffing, even after adjusting for the size of the university (Figure 1). The range of FTE for doctors per 10 000 staff was 0.0–28.46 and the range of FTE for nurses per 1000 staff was 0.0–6.89.

Health care is the only employment sector in the UK where guidance is currently available to employers about the staffing of occupational health services. The consensus professional guidance issued in 1999 by the Association of National Health Occupational Physicians (ANHOPS) states that for the first 750 employees, the core manpower requirements for an NHS hospital were 0.15 FTE medical time, 1–1.25 FTE nurse time and 1.25–1.5 FTE clerical/administrative time. For every additional 1000 employees, the recommendation was for an additional 0.125 FTE medical time, 0.75–1 FTE nurse time and 0.25–0.5 FTE clerical/administrative time [10]. Interestingly, the present survey shows that the skill-mix of occupational health staff in universities is similar to that in the ANHOPS guidelines. However, the absolute number of staff in university services is much lower than in these guidelines. Were universities to meet ANHOPS guidelines for their staff alone, the median staffing would be ~2–4 times greater than it is at present, and ~10–30 times greater if students were to be counted also.

These disparities generate questions for future research. It could be argued that the variation within and between sectors represents a response to genuine variation in need but it is also possible that employer priorities, such as reducing expenditure on infrastructure services, are more important factors. The authors would argue that some universities have occupational health services which are too small or inadequately qualified to provide an appropriate range of services. This is plausible because Tables 4 and 5 show that some university services do not offer what might be assumed to be 'core' services, such as self-referrals for work-related health problems, management referrals for cases where ill health may be affecting performance or conduct, workplace assessments related

Table 4. Reported individual referrals to the occupational health service

	Doctor	Nurse	Doctor and nurse	Not applicable or missing
Management referrals				
Ill-health retirement	70	4	14	5
Performance and conduct	27	12	28	26
Sickness absence	22	15	50	6
Adjustments under the Disability Discrimination Act	23	13	50	7
Fitness for work	16	19	52	6
Other reasons	5	11	15	62
Self-referrals				
Relating to health surveillance	12	23	40	18
Travel advice	8	45	18	22
Work-related health problem	12	28	44	9
Stress	10	22	46	15
Other reasons	3	16	8	66

to manual handling or annual reports. In rebuttal, it could be argued that university occupational health services are both efficient and effective and have prioritized their range of services to match their staffing with elimination of any non-evidence-based procedures. Furthermore, some services provided by an occupational health service in other employment sectors might be provided, in some universities, from other infrastructure services, such as safety or student health.

Despite their small size, many university occupational health services were providing a full range of services, including to some highly specialized occupational and student groups (Table 5). Others, as noted above, were not providing even core services. It may be that this

Table 5. Reported services and reports provided by the occupational health service

	Number (%)
Targeted pre-employment health assessment	
Staff exposed to human blood or tissue	56 (60)
Food handlers	55 (59)
Animal handlers	55 (59)
Night workers	54 (58)
Security staff	47 (51)
Drivers	47 (51)
Staff working with dangerous pathogens	38 (41)
Classified radiation workers	33 (35)
Teaching students	33 (35)
Nursing students	33 (35)
Medical students	23 (25)
Other ^a	24 (26)
Statutory health surveillance	
Respiratory—animal workers	60 (65)
Respiratory—other sensitizers	56 (60)
Noise	42 (45)
Vibration	22 (24)
Asbestos-exposed workers	19 (20)
Lead	13 (14)
Mercury	10 (11)
Other ^b	21 (23)
Workplace assessments carried out by the occupational health service	
Display screen equipment	71 (76)
Manual handling	46 (49)
Respiratory sensitizers	45 (48)
Skin irritant/allergen	45 (48)
Food handling	34 (37)
Other ^c	12 (13)
Reports and analyses	
Occupational health service activity data	57 (61)
Annual report of the occupational health service	49 (53)
Special audit data	30 (32)
Ill-health retirement	29 (31)
Sickness absence analyses	19 (20)
Employee satisfaction survey	12 (13)
Analysis of litigation and regulatory action	7 (8)
Cost of claims/cost-benefit analysis	4 (4)
Total	93 (100)

^aNursery staff/nursery nursing students (6), lasers (3), manual handling/display screen equipment (2), genetically modified organisms (2), porters/cleaners (2), professions allied to medicine (2), under-18, over-65, working in Third World countries, engineering, chemistry, sports science, vibration, pregnancy, divers, veterinary medicine and nursing students, maintenance staff, ceramics staff (exposed to silica, cadmium, lead and chrome), teaching and administrative staff, lone workers, glues/isocyanates and various chemicals.

^bRadiation (9), thallium (7), genetically modified organisms (4), arsenic (2), night workers (2), containment level 3 workers (2), cadmium, drivers, bladder carcinogen screening, organophosphates, heavy metals, monitoring of pseudocholinesterase levels, working time regulations and lone workers.

^cNew and expectant mothers (3), as required under Disability Discrimination Act (2), working time, lone working, drivers, audiometry for any noise-related areas, post-workplace accident, post-symptomatic assessment, general return-to-work assessment, musculoskeletal disorders and genetically modified organisms.

variation in the range of services reflected the size of the occupational health service and/or its stage of evolution. Occupational health is still a new service for universities and Table 2 shows that only a half of these services were in existence at the time of publication of the first guidance to universities in 1991 [2]. It is possible that the longer established services have had more time to demonstrate their value to universities and to build up a full range of services.

From the overall low level of staffing, it seems unlikely that the variation in provision is explained by over-provision by some universities—under-provision by all seems much more likely. One possible way of assessing the adequacy of the services would be a comparison with the guidance published by the International Labour Organization in 1985 [11]. Individual universities could also benchmark against their comparators, within and outside the higher education sector [10]. Efficiency savings could be made if neighbouring universities could share occupational health services and the pool of expertise increased if universities ensured that their occupational health staff have access to training and professional development.

The updated governmental guidance in the UK published by the Health and Safety Commission in 2006 is welcome [3]. However, it focuses on general occupational health needs. More focused guidance on specific topics, such as staffing and specific occupational health functions, should be developed by relevant bodies, which might include the Funding Councils, employers' organizations and education trades unions. Development of guidance could also be a task for HEOPS, the recently formed Higher Education Occupational Physicians special interest group on higher education.

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Conflicts of interest

None declared.

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