Letters

KU activity

We were interested to read the paper "KU activity: a method for calculating histopathologists' workload" by Suvarna and Kay, and note that they invite comments following the application of their scheme by other departments.¹

Our department is a dedicated cytopathology laboratory which in 1997 reported 59 628 cervical smears and 10 437 non-gynaecological specimens. The department is staffed by 2.5 WTE consultant pathologists (0.5 WTE currently vacant). It is located in a large teaching hospital and has close association with the department of histopathology, from which junior pathologists rotate through cytology for training (two to four with us at any time). The consultant staff also have undergraduate and postgraduate teaching commitments.

Table 1 shows application of Suvarna and Kay's KU activity to our workload numbers. This gives a total annual score of 30 133 KU. With 2.5 WTE, this is 1205 KU per session; at our current level of 2.0 WTE this is 1507 per consultant session. Application of the Royal College of Pathologists and BSCC guidelines on consultant staffing and workload (25 000 gynaecological specimens and 3000 non-gynaecological per WTE DGH cytologist) suggests we require a staffing of approximately 2.8 WTE consultants with additional allowance for teaching commitments.^{2,3}

We would, however, like to raise a few points and propose modifications to Suvarna and Kay's scoring to be equally applicable to a cytology service:

- For cervical cytology we presume that a figure of 2 KU per specimen (reported by a pathologist) allows for time taken in slide reviews for cytological/histological correla-

tion, clinicopathological conferences (CPCs), and staff training.

- The score of 1 KU per non-gynaecological specimen does not reflect the wide range of specimens and time taken in reporting. We agree that one KU is appropriate for many specimens (for example body fluids, brushings, urine, sputum). A significant proportion of our workload is fine needle aspirations (FNA) received from many sites, but especially breast, of which approximately 30% are from the breast screening programme. The latter can be extremely time consuming to report, involving numerous slides (up to 20 per case). In our department 70-80% of all breast FNA undergo immediate reporting, with the final report being issued by a different consultant who also reviews the immediate result; this is an important quality control aspect but adds time to the reporting process. One-stop breast clinics tie a pathologist down for reporting purposes for the duration of the clinic. This is time consuming. We therefore propose that a more realistic score for FNA from the breast screening programme would be 3 KU per specimen, with FNA from other sites and symptomatic breast disease being scored at 2 KU. This scoring, as with the gynaecological specimens, also allows for additional time spent on cytological/histological correlation and attending CPCs. Application of this modified KU score to our workload is shown in table 1, giving a annual total of 33 443 KU, which equates to 1338 per consultant session at 2.5 WTE and 1672 per consultant session at 2.0 WTE. No wonder we sometimes feel that we are working hard!
- Suvarna and Kay give no KU allowance for pathologists taking their own FNA samples, which in some departments is a large time commitment.
- Suvarna and Kay suggest that in university departments KU activity could be applied to sessions of research, teaching, or management. Management is also a requirement in an NHS department. Taking

820 KU per consultant session per year, as suggested, we suggest that 5 KU per hour could be used as a rough guide to calculate time spent on these other commitments.

We look forward to comments from Drs Suvarna and Kay on the points we have raised, but consider that modification must be made to their scoring system for application to a large cytology department.

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1 Suvarna SK, Kay MS. KU activity: A method for calculating histopathologists' workloads. *J Clin Pathol* 1998;51:530-4.

2 Consultant staffing and workload of histopathology departments. *Bull R Clin Pathol* 1997;98:1-3.

3 Recommended code of practice for laboratories providing a cytopathology service, 1997. *Cytopathology* 1997;Suppl 1:1-25.

Authors' response

We are pleased that some are attempting to evaluate the KU method of assessing workloads we described. Drs Johnson and Wadehra have certainly used the scheme accurately, and we confirm that they have correctly derived their total figure of 30 133 KU. It is stressed that the sessions counted in KU calculations are total sessions, rather than those allocated to "clinical" work. If Drs Johnson and Wadehra had their part time post filled, then the total KU/session would be 1108 KU. That they are carrying the extra load means they are doing 1410 KU/session each!

Our calculations presented in the paper showed a real year, in which a consultant retirement/reappointment took place. We did not stop counting these sessions when no post holder existed, but one can produce a calculation to validate one's claim for excess workload in terms of sessional activity. This is a particularly important point to grasp since it has hitherto been the rule that pathologists have accepted increased workloads, and have only complained when their capacity is exceeded by a major factor, such as the above. Thus, using the KU methodology (if one accepts the analysis) it would seem that the Royal Victoria Infirmary should have three WTE posts.

To turn to the specific questions posed, the KU calculations automatically assume that audit, management, CPCs, and other house-keeping duties are built into the values derived from any caseload. However, were one required to set up an entirely new session of duty, that would require compression of the pre-existing workload and this could then be calculated in terms of the time taken for the duty or the extra cases, as appropriate.

We wholly expect that many will disagree with our KU ratings. Rather than each department setting its own figures we need a quorum of departments to evaluate this methodology and then to revise (if necessary) our figures. We therefore welcome Drs Johnson and Wadehra's views on cytology weightings, and state in our defence that the figures reflect the large number of Cytospin sample cases that we see.

We have made no calculation for tasks such as taking FNAs personally. Our experience is similar in that most of this time is spent getting the pathologist to the patient and back again, with little time doing the aspiration! Rather than engender a discussion on the

Table 1 Application of KU activity scores to workload in cytopathology at Royal Victoria Infirmary

	KU activity				
1997		Suvarna and Kay KU weighting	KU score	Modified KU weighting	Modified KU score
Gynaecology					
Total	59 628	2	20 776	2	20 776
To pathologists:	10 388				
Non-gynaecological					
FNA breast:					
total	1916	1	1916		
screening	575			3	1725
symptomatic	1341			2	2682
FNA lung	88	1	88	2	176
FNA other	731	1	731	2	1462
Brushings:					
bronchial	385	1	385	1	385
other	406	1	406	1	406
Fluids:					
pleural	460	1	460	1	460
ascitic	163	1	163	1	163
breast cyst	132	1	132	1	132
miscellaneous	559	1	559	1	559
CSF	406		406	1	406
6% to pathologists:					
Sputum (total 1215)	73	1	73	1	73
Urine (total 2704)	162	1	162	1	162
Semen (total 1272)	76	1	76	1	76
Training:					
Non-gynaecological	400	2	800	2	800
Gynaecological	1500	2	3000	2	3000
Totals	10 437		30 133		33 443

merits of taking your own FNAs, we again state that we need more input from others to assess aspects of pathological practise that are dissimilar to ours.

We feel that management is part of good pathology practice. Were one to spend a regular whole (or more) session at management meetings outside the laboratory then this could be calculated in terms of the 820 KU/session rate. For the occasional 0.5–1 hour meetings that are so common nowadays we believe these to be part of the routine activity that pathologists perform, and thus these should be seen as already counted in the caseload figures.

As Furness has intimated,¹ looking at your own workload and that of others can produce feelings of “pride, guilt, satisfaction or indignation” and perhaps a few more besides! Histopathology today is facing an increasing demand from all hospital disciplines. To stay with Korner units, Welcans, and specimen numbers will not empower us to request resources to meet these increased demands. Only by being frank about ourselves/our departments with colleagues and NHS management will we be able to maintain the professional and appropriately resourced delivery of histopathology into the next century.

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M S KAY

Northern General Hospital, Sheffield

1 Furness PN. How much work do you do in a day? *J Clin Pathol* 1998;51:642.

Bouin's fixed trephine biopsies

We read with interest the recent paper of Gala *et al* concerning the reactivity of a panel of antibodies on Bouin's fixed bone marrow trephine biopsies, and the letter in response by Vassallo and Pinto.^{1,2} We have used Bouin's fixative for trephine biopsies during the last 10 years because of the beautiful morphology which is achievable, and we find that monoclonal antibody L26 gives consistent and excellent positivity (following three to five hours in Bouin's fixative to which formic acid 10% is added for further decalcification). The sections, in 10 mM citrate buffer, are subjected to two minutes of pressure cooking at full pressure before immunostaining using the Strept A B Complex/HRP Duet (Dako) for visualisation of reactions. This is such an important antibody for subtyping of marrow infiltrates and visualisation of unsuspected B cell infiltrates (while reacting with normal B cells also) that we felt it would be useful to add to the correspondence. We can also state that terminal deoxynucleotidyl transferase reactivity is demonstrable using the same technique (TdT is an important antigen for differentiation of lymphoid neoplasms arising at a primitive stage of lymphoid cell development which are, even in adults, relatively successfully treated with appropriate schedules).

Given known antigen positive and negative similarly fixed tissue, we suspect that differing antigen retrieval techniques will enable reliable demonstration of any antigen necessary, whichever fixative is used.

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- 1 Gala JL, Chenut F, Hong KBT, *et al*. A panel of antibodies for the immunostaining of Bouin's fixed bone marrow trephine biopsies. *J Clin Pathol* 1997;50:521–4.
- 2 Vassallo J, Pinto G A. Antibody panel in diagnosis of lymphoid neoplasms. *J Clin Pathol* 1998; 51:638–9.

Book review

Algorithms in Chemical Pathology. By M Crook. (£19.99.) Butterworth Heinemann, 1997. ISBN 0750627808.

This book introduces a new approach to organising fact and interpretation in chemical pathology. Being such a new concept, it takes some getting used to, but having appreciated the direction which the author has taken, the potential of this and likely future editions becomes very attractive. The book presents in 49 short chapters algorithms of laboratory data in various scenarios in chemical pathology, with accompanying detailed and informative notes, often startling in their introduction of previously unconsidered information.

This is a first edition, and already some changes may be appropriate, as for example with new diagnostic criteria for diabetes, and approaches to thrombolysis, myocardial infarction, CKMB and troponins. There are also occasions on which some pathologists would settle for less complex investigations than those recommended, as with the proposal that a raised alkaline phosphatase should lead straight to isoenzyme studies without consideration of additional enzymes such as γ -glutamyl transpeptidase; and in hyperuricaemia, where alcoholism, obesity, diabetes, impaired glucose tolerance, and impaired renal function might be considered before proceeding to analysis of 24 hour urate excretion. It might also be appropriate to consider phosphate within the algorithm for hypocalcaemia. But the fact that these comments can be made indicates that the algorithms as presented are profoundly thought provoking, and thus meet an important educational and instructive need. From the breadth of information provided, this volume should be extremely useful in accident and emergency departments and the general medical ward, as well as in the chemical pathology laboratory; and of particular interest to trainees constructing their own algorithms, as so much additional and unexpected information is provided. This is a very original, scholarly, and informative book and deserves to do well.

DEVAKI NAIR
TONY WINDER

CD-ROM reviews

Haematology Atlas (CD-ROM). By S C Anderson, K B Poulsen, S Cockayne, S C Dawson. (£40.00.) Williams and Wilkins Europe, 1997. ISBN 0683001655.

There are several CD-ROM based haematology offerings on the market. This is one of the cheapest. It is accompanied by minimal documentation but “help lines” for support

are available. Installation is easily carried out. The CD-ROM comprises an atlas, a morphology quiz, and mini case vignettes for diagnosis and interpretation.

The value of an atlas as a reference or as a teaching aid is dependent on the quality and variety of images for each topic. Unfortunately, although there is some variety, the quality, resolution, and staining are not consistently high. This diminishes the usefulness of the overall package considerably. It seems that an attempt to use image manipulation has been made to compensate for out of focus source material. This is not really successful.

The nomenclature used, while conforming to international terminology using Greek word stems (Bull BS, Breton-Gorius J), is not readily accessible to everyday practitioners of haematology, for example codocyte = target cell; rubriblast = pronormoblast. This is particularly important for trainees.

The format of the quiz and diagnostic modules makes them useful additions. Their potential as teaching aids is limited by the quality of the atlas. The limited number of diagnostic problems means that the “correct” answers can be “learnt” with a few sessions.

If the quality of the images was better the whole atlas would be of greater use. At present I do not think that, in spite of its price, it offers a real alternative to either the more expensive multimedia publications or the plethora of general and specialist haematological atlases in textbook format.

P W G SAUNDERS

Urinalysis—Tutor (CD-ROM). University of Washington. (£450.00.) Lippincott-Raven, 1996. ISBN 0397553803.

The cover notes of this CD-ROM state “Discover the interactive computer system that helps you make the right call every time! URINALYSIS-TUTOR gives you all the information you need for accurate urinalysis at the click of your mouse. No previous computer experience is required.”

This is essentially an atlas of urinalysis with short bullet point pieces of text accompanied by a comprehensive library of images. The CD is divided into five sections: “Introduction to urinalysis,” “Urine sediment structures,” “Disease associations,” “Image index,” and “Final exam.” The section on microscopic features of “Urine sediment structures” is well illustrated and allows the opportunity for self assessment. Some useful diagrams cover basic anatomy, physiology, and principles of microscopy. The “Disease associations” section lists biochemical features and microscopic findings in common diseases. The “Image index” is straightforward and it is easy to locate the desired images.

Does it live up to the claims in the cover notes? The answer is yes. Starting from a background in cytopathology, I worked my way through the tutor and managed to answer the questions in the final exam correctly. The program is easy to install, the user interface is intuitive, and the CD ran adequately on my old double speed CD player.

Should we all rush out and purchase it? This is a more difficult question. It is a useful training tool but I am not sure if it could compete with a comprehensive, well illustrated text in the same price range.

NEIL ANDERSON

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Papers for publication should be sent to the Editor, *Journal of Clinical Pathology*, BMA House, Tavistock Square, London WC1H 9JR (tel: 0171 383 6209/6154; fax: 0171 383 6668; email: jclinpathol@compuserve.com). Receipt of manuscripts will be acknowledged by the editorial office.

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References

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 - 1 Fletcher CDM, McKee H. Sarcomas - a clinicopathological guide with particular reference to cutaneous manifestations. I. Dermatofibrosarcoma protuberans, malignant fibrous histiocytoma and the epithelial sarcoma of Enzinger. *Clin Exp Dermatol* 1984;9:451-65.
 - 2 Washington JA. Conventional approaches to blood culture. In: Washington JA, ed. *The detection of septicemia*. West Palm Beach, Florida: CRP Press, 1978:41-87.
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- 1 International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *BMJ* 1991;302:338-41.
- 2 International Committee of Medical Journal Editors. Protection of patients' rights to privacy. *BMJ* 1995;311:1272.

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Revised January 1999