

Report by Alec Howat for BDIAP Council on Support for sub-Saharan Anglophone African Pathology

Summary

The major issues are (all labs face these issues to a varying extent):

1) Low quality service of limited value to clinicians; specimens are thus not sent for pathology. There is limited quality control, no quality assurance and limited general lab quality standards with poor health and safety measures.

2) Poorly resourced service with most patients paying for tests, frequently resulting in an H&E diagnostic service.

3) Variable training and quality of BMS/technologist staff.

4) Problems with consumable supplies.

5) Poor turnaround times for reports.

6) Lack of medical pathology training.

7) Lack of books and educational material.

8) Lack of infrastructure such as fast internet.

Recommendations and suggested action plan:

1) Short-term (weeks) –

- a. Ask departments to identify unused but recent books; we will set up a database of departments and individuals interested in offering this service. General pathology books such as Rosai's Ackerman are needed in particular. Previous 'nearly new' editions would be welcomed. East African Division of the IAP secretariat will identify departments to receive the books. Books will be sent using 'Bookaid', similar charities or our own charitable monies.
- b. Provide a 'second opinion' service for cases that cannot be worked up properly ie those needing IHC. These may be relatively simple cases and not necessarily rarities. (My medical defence provider, MPS, has informed me that this will not incur any extra payment to them as the service will be provided *gratis* by us).

2) Medium (months) –

- a. Initiate an East African/British School of Pathology to be run like other schools. Suggest first to be linked to inaugural EADIAP meeting in 2009.
- b. Encourage FNA as this is cost-effective; this is a very important area for development and training.
- c. Continue to send lecturers/goodwill ambassadors to APECSA, SADIAP and EADIAP meetings.
- d. Get African Pathologists to attend international meetings on condition that they produce a poster or talk. This may stimulate activity back home (or encourage emigration but that is a risk that has to be taken).
- e. Arrange for training/update periods of 2-6 months in BDIAP countries and Republic of South Africa (RSA).

- f. Support the set-up of quality procedures including internal QC, external QA schemes, MDTs etc.
 - g. Liaise with IBMS regarding improvement of technical services.
 - h. Encourage greater dialogue with clinicians who send samples to inform to educate them as to the value of cellular pathology.
- 3) Longer term (years) –
- a. Encourage BDIAP pathologists to do locum work in Africa; this will improve departments by sharing organisational competency and providing education. This is particularly pertinent to recently retired senior pathologists.
 - b. Help local teams raise the political profile of pathology and hence funding. Support from clinicians is needed to influence the health ministers.
 - c. Support ‘Centres of Excellence’ at Jo’Burg, Nairobi and Cape Town.

Visit:

Neil Shepherd and I were picked up by Ahmed Kalebi and a driver from Nairobi airport at 6.30am on 22.10.08. First we went to visit the Kenyatta National Teaching Hospital (KNH); we met a number of clinicians and surgeons who gave their view of the service and its limitations. We visited the laboratory and met trainees and the Chairman of the Department of Pathology. We also met the Dean who was an Anaesthetist by trade. KNH is the teaching hospital for the University of Nairobi; it has ~10 Anatomical Pathology (AP) Consultants and >10 Clinical Pathologists. The workload is <5,000 histology cases per year but most Consultants also work in private labs in Nairobi (total workload for Nairobi is ~30,000 per year).

We then went to a nearby administrative building in an attempt to meet the Kenyan Head of Medical Laboratory Services housed in a striking but crumbling colonial building; he was however not available. Interestingly we noticed a brand new well-maintained adjacent building with a huge satellite, electric gates etc and were told that this was for HIV investigation and funded separately by the Gates Foundation and other donors such as CDC, USAID and Global Fund.

Next was a visit to the private Aga Khan University Hospital (AKUH). This was well equipped and staffed with a good number of technicians although there were only 2 permanent AP Consultants for 12,000 surgical biopsies; the two are however aided by KNH public service Consultants doing ‘sessions’ in the laboratory. Only about 10-15% of Kenyans have private health insurance or company/employee medical cover schemes; others have to pay for their services. However, ~75% of pathology in Kenya is private provided by private labs ranging from the well-established to sprawling uncontrolled makeshift ones run by untrained staff. The dominance of private practice in Kenya pathology (private means practices run by individual pathologists/technologists, hospitals such as AKUH, missionary hospitals and donor-funded NGOs) is largely due to a failure of administration within public hospitals/public laboratory services related to poor budgets and lack of respect and interest from administrators; the result is that pathologists in the public sector have been driven to seek alternate ways of providing services and gain reasonable remuneration. Patients are driven to the private sector due to the poor

service in the public domain. With or without insurance, the majority of patients have to pay out-of-pocket expenses in order to get their biopsies reported whilst those who can't afford this have to make do with the service from public labs or no service at all. Prices in private labs are about x2-x5 those in the public sector where an average histology cost is ~5USD; the AKUH gives a subsidised price for biopsies from the public sector to encourage volumes for training purposes.

After that we went to the airport to catch the 4pm flight to Mombasa.

Background:

- 1) History of Pathology Training in the APECSA region –
 - a. Prior to the 1980s, budding APs were sent to the UK for 5 years to do the MRCPATH and then return home, rather inappropriately trained for the actual disease work. A large number never went home but stayed in the UK or went to USA or the Middle East.
 - b. Outside the RSA, there are three postgraduate pathology training schools, one in Makerere (Uganda), one in Nairobi (Kenya) and one in Dar es Salaam (Tanzania) each providing a 3-year MMed course. The MMed course in Kenya covers all pathology specialties but Kenya regulations require a 2-year post MMed period of work under supervision including preferably a short period of extra training/attachment in a good centre, often abroad, before awarding Consultant status. The MMed training in Uganda and Tanzania focus either on AP or CP. The University of Nairobi also offers a 3-year MSc Cytology program for scientists and doctors. Recently MMed Training was started at AKUH this being a 4-year course covering AP or CP. There are currently 18 trainees at KNH (6 per year) with another 6 trainee cytologists. AKUH has 4 trainees per year.
 - c. In the 1980s, Mike Hutt from UK was commissioned to look at training in the APECSA countries; APECSA was formed at Harare in 1987 (Sebastian Lucas is a founder member). Although APECSA is for all specialties, Anatomical Pathology dominates the meetings. RSA joined APECSA in 1994 having been initially excluded due to apartheid; in practical terms the RSA is on its own under the Federation of South African Societies of Pathology (FSASP) which functions separately from, but supports, APECSA. One of the principles under the Hutt Commission was that any trainee from any of the member countries should be accepted for training in any centre in the group; closer ties with WHO were proposed but this never materialised. In 2006, there was a proposal to set up a College of Pathology (COPECSA) which was ratified at the present meeting in Mombasa. Rwanda and Burundi joined in 2006 (politically there are closer ties between these two countries and Kenya, Uganda and Tanzania with a single common market to be achieved by 2010 and free movement of the labour force by 2012; English is now the official language of Rwanda and Burundi). Finally a proposal to establish the East

African Division of the IAP was mooted in 2006; the launch of the EADIAP was at the present meeting in Mombasa.

- 2) Pathology Provision – at present, apart from RSA, there is a severe lack of medical staff in laboratories. One critical factor is poor salary; APs earn less than their clinical colleagues even in the private sector. The following figures for pathologists (general not pure AP) give a flavour:

- a. Kenya – 25 in 1985, now 39
- b. Tanzania – 11 in 1985, now 39
- c. Uganda – 11 in 1985, now 28
- d. Zimbabwe – 10 in 1985, now 5
- e. Zambia - 5 in 1985, now 2
- f. Malawi – now 3
- g. Botswana – now 2
- h. Mozambique – now 2
- i. Rwanda – now 3
- j. Burundi – now 1
- k. Total – 59 in 1985, now ~130

USA has 21,000 pathologists at a rate of 7/100,000 population; APECSA (without RSA) has 130 at a rate of 0.08/100,000.

Most labs only receive about 1,000-2,000 biopsies per year with only 1 receiving >20,000 (Jo'Burg); 2 labs receive <500 pa.

66% of labs receive <1,000 FNAs pa.

60% participate in a cancer registry system

Most labs have <2 working microtomes

>97% use plastic cassettes

52% do <10 special stains

60% do no IHC

50% have a computer system

22% have no journals, 90% <4

50% do frozen sections

(The above figures are from a WHO-funded investigation by Ann Nelson, Ahmed Kalebi and Sebastian Lucas and are draft, based on results from 35 labs in the APECSA region including Mozambique, Lesotho and Swaziland as well as some countries outside the APECSA region such as Nigeria, Ghana and the Ivory Coast; the final report will be made available in due course).

- 3) Funding and Equipment – in sub-Saharan Africa, 3% of the world's health workforce cares for 10% of the world's population bearing 24% of the global burden of disease with 1% of the world's economy (BMJ 337: 958-960, 2008). Lack of funding for pathology is seen as not being important (need to promote the RCPATH comment "pathology: the science behind the cure"). Poor equipment, low staffing, lack of funds leads to a poor quality product of little value in helping patient management. Lack of operational competency with little back-up, service contracts, on-going maintenance etc (new freezing microtome in Kenyatta Hospital donated by a charity sitting unused as no-one knows how to service it).
- 4) Infrastructure – several laboratories do not have a reliable phone line let alone computers. Internet is extremely slow; there is a new large fibre optic cable being

laid down the east side of Africa; this is already behind schedule but likely to be in service by the end of 2009. Telepathology and e-learning therefore are inappropriate at present (Fred Silva from USCAP was shocked to realise that the superb online 'Knowledge Hub for Pathology' would not be accessible to APECSA members due to local internet inadequacies). Likewise the WHO initiative of developing an interactive pathology resource, the web site InPaLa , needs improvements in internet technology in the area.

- 5) Educational material – there is a severe shortage of books; at KNH, the trainees were using a 1964 Ackerman. Books and CDs are much needed. Several departments receive journals via the Friends of Africa initiative (see below).
- 6) Tribalism and Protectionism – there are tribal issues with some tribes being unwilling to work with others. In addition, there is professional envy against those that might have had preferential training such as periods abroad.
- 7) Local Leadership – this is of critical importance as the development of pathology can only be achieved by local drive and dynamism with a shared vision. Luckily there are a few individuals with these skills such as Ahmed Kalebi and Shaheen Sayed; they are to be supported in every possible way. Of course, the ultimate aim is for changes to become sustainable and embedded within normal practice, not reliant solely on a number of key individuals.
- 8) Links between Organisations – a number of organisations are doing worthy acts to help pathology in the area such as BDIAP, USCAP, WHO, RCPATH, Friends of Africa etc. There needs to be local co-ordination of these initiatives, best undertaken by EADIAP for AP under APECSA, and APECSA for general pathology.
- 9) Centres of Excellence – a goal is to set up Centres of Excellence in the APECSA region. The most likely centres initially are Jo'Burg, Cape Town and Nairobi; these would co-ordinate cases for referral/2nd opinion and work them up or send them for a tertiary opinion abroad. It is however important to ensure that the Centres of Excellence do not become *prima donnas* leading to professional envy from other labs; all labs should be stakeholders to ensure no-one feels left out and no-one dominates the set-up in a way that drives others away. Nevertheless, raising the quality of the service and issuing meaningful helpful reports is essential as it will lead to more biopsies being sent. COPECSA should agree protocols and SOPs which would be used by peripheral labs and centres.
- 10) WHO Pathology Consensus meeting, Dar es Salaam May 2008 – this was a meeting to discuss a wide range of issues. Sebastian Lucas attended. Topics discussed included:
 - a. Protocols for collecting blood and tissues for infectious diseases
 - b. Roles and benefits of autopsies with cause of death surveillance
 - c. Cancer diagnosis with tissue banks
 - d. Safety related to HIV, biothreats and exotic agents
 - e. Capacity and workforce
 - f. Training centres
 - g. Way forward

- 11) Friends of Africa (USCAP) – started by Fred Silva and managed by Prof Adesina Adekunle from Texas. The mission is to enhance the quality of pathology in sub-Saharan Africa. There are 3 phases:
- a. Now sends journals (Archives, Mod Path, Hum Path, AJCP, AJSP, J Neuropath and soon Histopath and J Path) to 65 institutions in 18 countries (7 Kenya, 2 Rwanda, 3 Tanzania, 2 Uganda, Zambia 3, Zimbabwe 2, Angola 2, Botswana 1 + West African countries). Also make available e-journals and USCAP Knowledge Hub (but see item 4 above).
 - b. Increase medical education by updates, seminars, annual pathology courses and conferences in APECSA area. Also waive fees for attendance at USCAP and IAP Congresses. USCAP have identified \$100,000 for sub-Saharan pathologists to attend 2012 Congress in Cape Town; they must show a paper or poster and give a post-Congress report to their departments.
 - c. Start an ‘Equipment for Africa’ campaign. This will be serviceable but used equipment for donation. There are huge logistical issues with this project including transport and local bureaucracy.

Conclusions:

The general feeling at the end of the meeting was that there is an opportunity to make a massive difference to the health of the population by improving the Pathology service.

The main areas are:

- Improve training, both locally and abroad
- Improve quality
- Supply appropriate educational material
- Co-ordinate the various worthy initiatives

However, the size of the task must be appreciated by Council. What may appear to us to be relatively simple objectives and easily achieved, may not turn out to be so in sub-Saharan Africa. Sebastian Lucas, who has extensive experience in Africa, states ‘it is striking that Pathology is the first clinical service to disintegrate when times get hard financially (and politically), partly because it is so vulnerable to interruptions of supplies (eg alcohol) and partly because the clinicians do not respect it very highly. This leads me to wonder whether we will ever get really far until the economic prospects for these poor countries improves.’

Despite these caveats, I recommend the action plan on page 1 to Council. The plan will have to be carefully costed and an annual budget agreed by Council.

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