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Training and practice of cytotechnologists: a discussion forum focused on Europe

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Training and practice of cytotechnologists: a discussion forum focused on Europe

Objectives: To discuss the role and training of cytotechnologists (CTs) in Europe, to identify areas of good practice and to provide an informed opinion to those providing guidelines for training and practice in Europe.
Methods: All members of the Editorial Advisory Board of *Cytopathology* were invited to take part in a 'discussion forum' for which six topics were circulated in advance concerning the roles of CTs with regard to: (1) pre-screening slides; (2) 'signing out' reports; (3) carrying out ancillary techniques; (4) supervising laboratory staff; (5) taking part in rapid on-site evaluation (ROSE) of fine needle aspirates (FNAs); and (6) whether CTs were trained specifically in cytopathology or in general histopathology. Notes of the meeting were circulated by email and a final report was agreed by 22 participants from 17 predominantly European countries.
Results: Training for CTs throughout Europe was variable, especially for non-gynaecological cytology, which was inconsistent with the range of activities required. The participants recommended graduate entry, preliminary training in general laboratory technology, and subsequent training to take account of the probability and, in some centres, the reality of primary cervical cancer screening changing from cytology to human papillomavirus (HPV) testing. They further recommended that CTs should perform HPV tests and take part in ROSE for FNAs, and they supported the European Federation of Cytology Societies developing guidelines for training and practice.

Conclusion: With CT training added to a university-based education in laboratory or biomedical science, a career in cytotechnology should be an attractive option involving a diverse range of laboratory and clinically based activities.

Keywords: cytotechnologists, training, cervical cytology, cytopathology, guidelines, ancillary tests

Introduction

The discussion forum was convened by the *Cytopathology* Editorial Advisory Board following previous discussions among member societies of the European Federation of Cytology Societies (EFCS), and aimed to broaden the debate about the role and training of cytotechnologists (CTs). All members of the Board were invited to the meeting and were sent, in advance, six topics as a basis for the discussion: (1) the range of cytological samples currently prescreened by CTs, such as cervical cytology, exfoliative cytology and fine needle aspirates (FNAs); (2) current practices for CTs 'signing out' cervical and non-cervical tests; (3) the range of technical methods carried out by CTs, such as liquid-based cytology (LBC), cell blocks, preparation and staining of samples from endoscopy and FNA sessions, human papillomavirus (HPV) testing, immunocytochemistry (ICC), fluorescence *in-situ* hybridization (FISH) and other molecular techniques, andrology, urinary and/or joint fluid crystals; (4) the roles of CTs in supervising laboratory assistants; (5) attendance of CTs for rapid on-site evaluation (ROSE) of FNAs with or without pathologists. The sixth topic related to whether CTs were specifically trained in cytopathology or as part of a general laboratory science qualification, whether they were trained to screen cervical and/or non-cervical microscopy, and whether cytopathology was a separate department or part of histopathology as a whole. The participants in the discussion forum comprised 22 members of the Board from 17 different countries: Australia, Austria, Canada, Croatia (×2), Denmark, France (×2), Greece, Hungary, Italy, Kuwait, Norway, Poland, Portugal, Russia, Turkey, UK (×3) and USA (×2).

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The discussion started with the presentation of a survey carried out by Maj Liv Eide and Veronika Anic, a report of which is published in this issue of *Cytopathology*.[1] We sought to identify criteria for good practice that might be used as models for centres or countries in which problems had been encountered in developing CT training programmes, and aimed to provide an informed opinion to advise those involved in establishing European and national guidelines for the training and practice of CTs. We recognized from the outset that practices were likely to vary throughout Europe and beyond, and to differ for cervical screening and non-cervical cytology.

With background information gathered by the participants, the main focus of the discussion was to clarify, on the one hand, the changing role of CTs as a result of HPV testing and to identify, on the other, opportunities for the expansion of professional roles, especially in non-gynaecology cytology. This shift in roles needs to be reflected in the training and accreditation of CTs as pointed out some time ago in an editorial in *Acta Cytologica*.[2]

CTs' survey and proposals for training

V.A (Croatia) briefly presented the essentials of the results of the survey and proposals for cytotechnology training as presented to the European Advisory Committee of Cytotechnology (EACC) and last year to the EFCS, which she and M.-L.E. have now published in this issue of *Cytopathology*.[1] The proposals explain what is needed, including skills to be achieved by CTs in training (rather than exact numbers of slides to be screened), which would be recorded in a portfolio with defined periods of time in different sections of cytology. They are looking for support from the EFCS to take their proposals forward. The authors conclude that: 'The survey shows variation in basic education and cytology training especially with respect to non-gynaecological cytology although graduate entry is favoured. The role of CTs is changing and the education and training programmes need to adapt to these changes.'[1]

Activities and responsibilities of CTs

Appropriate training and accreditation require a background of information about what activities CTs are currently engaged in and what responsibilities they have. In the event, much of the discussion was focused on HPV testing and ROSE for FNAs.

HPV testing

There was general agreement that HPV testing should be reported along with the cytomorphology result and that cytotechnology training should be broad enough to make this feasible. Participants from Australia (A.F.), Austria (M.T.), Canada/Portugal (F.S.), France (B.C.P.), Hungary (L.V.), Italy (P.Z.), Turkey (B.Ö.) and the UK (A.W.) all subscribed to this view in discussion, which A.F. said was increasingly what happened in Australia and New Zealand. Developments in cervical screening were not necessarily logical. B.Ö. reported that, in Turkey, a protocol was approved 5 years ago for Papanicolaou (Pap) smear screening of women aged 30–65 years. Then, without sufficient comment on how these procedures were to be coordinated, the same Ministry more recently approved primary HPV screening and family physicians were expected to send cytology samples straight to Microbiology, leaving Cytology out of the loop. Reflex cytology will be carried out on LBC vials only for the high-risk HPV-positive cases. This was also a problem in Italy, where microbiologists in some institutions have taken over HPV tests because CTs did not have the resources and/or training to do them (P.Z.). B.Ö. said, 'guidelines are badly needed for an algorithm to combine HPV testing with reflex cytology', as discussed earlier in 2013 by the Turkish Society of Cytopathology with Ritu Nayar from the American Society of Cytopathology, Kari Syrjanen and Luigi di Bonito of the EFCS.

Martin Tötsch, speaking as Secretary General of the EFCS, explained that he was aware that the situation needed to be controlled. In some (but not all) places, histopathology and cytopathology departments carried out the HPV testing. He explained that the European Union of Medical Specialists (UEMS) – Section Pathology had a dedicated group looking at guidelines for practising molecular testing by pathologists, including the detection of HPV. This working group will present their results in the very near future. M.N., speaking for Greece, where there are no official CTs because cytopathologists (medical doctors) do all the Pap smear screening, agreed that Europe must create a task force as an official statement is needed. She pointed out that, luckily, laboratories had LBC vials and so they had control of the material for HPV testing. Their Ministry of Health was aware of this advantage for cytopathology. In the Russian Federation (I.S.), molecular biology, including HPV testing, was gradually being developed with discussion of the use of HPV testing as a primary test. I.S. also said that cytologists in Russia believe that cytological screening should be the first test, because of the possibility of detecting other asymptomatic cervical and endocervical lesions, such as infections, and CTs play an important role in this area. LBC is regarded as an important tool because polymerase chain reaction (PCR) and other molecular techniques can be carried out on the same vial.

Rapid on site evaluation of FNA cytology

One of the areas of non-gynaecological cytopathology that is expanding is the clinical demand for laboratory staff to attend image-guided FNA sessions to assess sample adequacy, provide preliminary reports and triage cellular material for an increasingly diverse range of ancillary tests. Although this may be seen as an imposition on pathology budgets, it is also a saving in clinical, radiological and endoscopy suite personnel time, and avoids the expense of repeat tests, inappropriate ancillary tests and surgical procedures requiring general anaesthesia.[3] It is an area of cytopathology where the demand for involvement of CTs will increase, whilst it decreases for cervical screening as a result of HPV testing and vaccination. Training and experience in microscopy gives CTs a distinct advantage over technologists and scientists working exclusively in histology departments.

Biomedical scientists (BMS, equivalent to CTs) in many centres in the UK (A.W.) prepare FNA slides, assess their adequacy and take the slides and cellular material to the laboratory for immediate assessment by cytopathologists to determine the best use of material for ancillary testing. In some instances, they select and retain samples for ancillary tests. As ultrasound (US) guidance has become widespread for FNAs, pathologists are now less likely to take their own aspirates; but the need for immediate assessment has remained and increased. CTs and 'clinical cytologists' in Croatia (V.A.) often both attend US-guided FNA sessions, but sometimes clinical cytologists or CTs alone. On the other hand, Norway

(M-L.E) was similar to the UK and ROSE was more often performed by CTs nowadays and less often by pathologists. There was a drive for centralization in the UK (R.D.), but room for rationalization: it was not cost-effective for BMS to move around to different US-guided FNA sessions. There was a clear need to improve and generalize the training of BMS in non-gynaecological cytology. Endobronchial US and endoscopic US (EBUS and EUS)-guided FNAs were often received from remote centres, which had much greater inadequacy rates.[4] A study in Portsmouth cited above[3] found that the number of patients requiring repeat procedures was significantly lower in FNA sessions attended by BMS. Cytopathologists and CTs often both attend FNA sessions in Portugal (M.H.O.), but CTs are being trained to carry out ROSE on a pragmatic institutional basis; this is the same as the situation in Australia and New Zealand (A.F.), as reported by Shield *et al.*[5] From experience in the UK (A.H.) and Portugal (M.H.O.), a cytopathologist and CT were often both needed for EBUS FNA because the samples followed one after another so rapidly. Pathologists in Kuwait (K.K.) attend all US-guided FNAs as this is not a recognized activity for CTs and so they are not willing to do it.

Although there was an increase in FNAs with attendance of laboratory staff, particularly CTs, participants from the USA (H.E.) and Poland (W.O.) pointed out that the use of FNA cytology was dependent on the competence of local pathologists and the willingness of clinicians to use the test. There was often a shortage of pathologists, especially those with an interest in cytology. H.E. added that telepathology helps: CTs can be trained to use cameras and send images to pathologists, who can assess multiple cases at much the same time. Participants from the UK emphasized the importance of cytology being reported in the setting of a multidisciplinary team.[4] Centres in Australia (A.F.) varied in their awareness of the potential role of cytology in various clinical settings, but the bottom line was that the FNA samples were too precious to leave to clinicians and that ROSE achieved a better and more cost-effective use of ancillary tests. There was a clear opening to train CTs for FNA ROSE as requirements for gynaecological primary screening decline. 'Don't forget residents', B.Ö. (Turkey) reminded us. Without trainees attending FNAs, where will the future pathologists with an interest in cytology come from? In Turkey, fourth year pathology residents attend FNAs at some institutions, but reimbursement of pathologists for ROSE and training of laboratory technicians as CTs are also being developed. Although the Russian Federation (I.S.) does not officially have CTs, biologists, who are university graduates, may carry out ROSE in some oncological dispensaries or cancer research institutes, together with specialized medical doctors.

Other activities of cytotechnologists

This was first explained in a written submission from Denmark (K.N.), which explained the diversity of tests that may be carried out by CTs, the level of responsibility that may be achieved, and perhaps the advantages in terms of practice as well as training of cytology being an integral part of a pathology department. The activities and levels of responsibility are summarized in Table 1 for Denmark, with those of three other countries (Croatia, Australia and the UK), because their representatives in the Forum (I.K-S., A.F. and A.W.) provided detailed information in correspondence after the meeting. Table 1 shows the diversity of activities and responsibilities that may be undertaken by CTs, although, in Croatia and the UK, there is considerable variation between laboratories. This Danish experience is different from Australia (A.F.), where CTs do not sign out any cytology specimens except for negative Pap smears (which are usually rapidly rescreened or have a primary automated assessment). CTs in Australia are rarely jointly employed in histology and cytology laboratories and have different educational requirements and training programmes (see below).

Responsibilities of cytotechnologists

The discussion revealed a wide variation in the levels of responsibility given to CTs, and therefore there would be some local variation in requirements for training and accreditation.

'Signing out' by CTs tends to be limited. In Kuwait (K.K.), pathologists sign everything out; in Portugal (M.H.O.) and Austria (M.T.), pathologists sign out all non-gynaecological cytology and 10% of negative Pap smears (the latter for reasons of quality control). The most frequent protocol (e.g. Croatia, USA, Turkey, Poland, Russia, Hungary and Italy) was for CTs to sign out negative cervical cytology tests, but not non-gynaecological cytology. H.E. added that signing out of both gynaecological and non-gynaecological results

Table 1. Activities and responsibilities of cytotechnologists in four countries

	Australia	Croatia	Denmark	UK
Pre-screening				
Gyn	Yes	Yes	Yes	Yes
Exfoliative NG	Yes	Yes	Yes	Yes (some tests)*
FNAs	Yes	Yes	Yes*	Yes*
Technical work	LBC; cytospins; CBs, ROSE (US, EBUS, EUS); andrology; wet preparations	LBC*; cytospins; CBs*; andrology*; wet preps*; ICC (most labs); HPV & FISH†; preparing FNA slides at US, EBUS and EUS	LBC; cytospins; CBs; andrology; wet preparations; ICC; HPV; FISH	LBC; cytospins; CBs; andrology*; wet preps*; HPV (22/88 labs); ICC & molecular pathology (1/88)
Lab assistants employed	Yes	Yes, supervised by CTs	Few lab assistants	Yes, supervised by BMS
ROSE	Yes	Yes*	Yes*	Yes, often with slides taken to pathologists in laboratories for assessment*
Signing out				
Negative gyn	Yes	Yes	Yes	Yes
Positive gyn	No	No	Yes	Yes (APs)
Exfoliative NG	No	Yes, some negative tests	Yes, some tests*	Yes, some negative tests*
FNAs	No	No	Yes, some tests*	No
Department structure	Most combined as Anatomical Pathology Some separate cytology departments All managed by pathologists	Independent cytology departments* Part of clinical departments* Part of pathology (but not histology)*	Cytology part of pathology; CTs may also work in histology	Cytology and histology as separate sections of histopathology/ cellular pathology Minority fully integrated in a single department

AP, advanced biomedical scientist practitioner; BMS, biomedical scientists; CB, cell block; CT, cytotechnologist; US, ultrasound; EBUS, endobronchial US; EUS, endoscopic US; FISH, fluorescence *in-situ* hybridization; FNA, fine needle aspirate; Gyn, gynaecological; HPV, human papillomavirus; ICC, immunocytochemistry; LBC, liquid-based cytology; NG, non-gynaecological; ROSE, rapid on-site evaluation.
*Variable practices within countries.
†Some highly specialized laboratories.

in the USA was heavily regulated (as in Australia, A.F.). CTs are only allowed to sign out negative gynaecological specimens. Abnormal gynaecological and all (negative and abnormal) non-gynaecological specimens are signed out by pathologists. In Australia (A.F.), in years gone by, CTs used to sign out negative urines, but currently may only sign out negative Pap smears, with all other cases signed out by pathologists. The UK is similar to Australia in this respect, including CTs signing out urines in the past (A.H.). The UK now has an Advanced Practitioner grade of BMS for reporting all types of cervical cytology reports. The current practice in Denmark is an example of the greatest degree of CT responsibility reported in this Forum (see Table 1). Most countries expect CTs to work under the supervision of pathologists, who usually take responsibility for diagnoses and test results, and CT training and practice depend indirectly on the commitment of pathologists to cytology and their level of training.[6]

What training is required for CTs?

Having established the range of activities, changes in practice with new technology and variation across the countries represented in the Forum, it is hardly surprising that there is considerable diversity in education and training for CTs. Furthermore, training must be taken in the context of the academic standard of the entrants to cytology training, the accreditation requirements of national bodies and the laboratory training as a whole, especially now that diversification is the preferred way forwards; moreover, now that cervical cytology is being centralized or largely replaced by HPV testing, many CTs will no longer be engaged in it at all. Differences in the training required prior to cytopathology training are explained and tabulated by Anic and Eide.[1]

A.W. (UK) led the discussion by describing the situation in the UK, which has highly organized training for gynaecological cytology, but far less so for non-gynaecological cytology. He explained that BMSs were trained in all laboratory disciplines initially (after a bachelor degree course in general biomedical science) and had non-gynaecological training in-house. Graduate entry was not required for 'cytoscreeners', who were specially trained (more frequently in the past than nowadays), and did not necessarily have a background as laboratory technologists. Gynaecological cytology training was standardized in the UK and carried out in established training schools and tightly structured, with introductory courses, updates and national assessment. Non-gynaecological cytology training was more variable, with centres of good and poor practice and was not mandatory. Some training schools provided non-gynaecological cytology training, but there are no national standards. Advanced BMS Practitioners had additional training with an examination and, once qualified, could sign out all types of abnormal gynaecological cytology, present cases at multidisciplinary meetings and carry out audits etc., thus acting in a similar way to pathologists. A.H. noted that the good quality of gynaecological cytology training was reflected by the high sensitivity of cervical cytology reported in UK trials such as ARTISTIC.[7] A.W. further explained that plans were afoot for improved training and examinations for CTs in non-gynaecological cytology, including an examination in advanced practice. In Australia and NZ (A.F.), the CTs are trained and examined for the Australian Society of Cytology (ASC) Cytotechnologist Certificate in both gynaecological and non-gynaecological cytology, including FNAs, although their practice may then become specialized dependent on their site of employment. The report of the survey (V.A., M.-L.E.) shows that training in many countries is concentrated on gynaecological cytology.[1]

Three-year bachelor (i.e. university-based) courses were similar in Portugal (M.H.O) and Austria (M.T), with special post-graduate courses for CTs in gynaecological and non-gynaecological cytology. However, the teaching was not school-based and was variable, depending on the institution.

In Australia (A.F.), all cytotechnology training is practice-based and is governed by a very detailed syllabus created by the ASC, and there are several masters courses available in universities and a fellowship available through the Society for further training. CTs have a minimum requirement of a Bachelor of Science (BSc) degree or similar, whereas most histology technicians are only 2- or 3-year diploma graduates, because of the increased cost of employing scientists (e.g. CTs) in histopathology laboratories. In addition, all CTs must hold the ASC Certificate (minimum of 2 years' training in an accredited department plus examinations), and most CTs also sit the International Academy of Cytology (IAC) examination. Thus, they can then attend EBUS and EUS procedures providing ROSE, and also pre-screen all specimens. The academic minimum requirements for entry to cytotechnology training have an impact on the potential training regimes and the actual nature of the practice of cytology in the particular countries. For example, CTs with an Australian BSc with 'double certificates' (both the ASC and IAC certificates in cytology) allow competent FNA screening, which is not always feasible with training regimes in other countries.

Some countries have cytotechnology training 'under development', as in Hungary (L.V.), where there is an additional problem of there being very few CTs. There are high school 6-month courses for gynaecological cytology, but nothing for non-gynaecological cytology, and CTs are often constrained by not being able to move away from where they live. University-based education for general laboratory technology is currently being developed to include histology, immunology and cytotechnology. There is currently a gap, filled to some extent by short courses over a 1-year period with 10–12 participants,

and EU guidelines 'would help' (L.V.). There are currently no official CTs in Turkey, although plans are being discussed (B.Ö.). In 1970, a few universities in Turkey, such as Ege University, accommodated PhD programmes for a small number of biologists, who went on to work as CTs screening gynaecological cytology until they retired. Presently, there are nearly 20 unofficial CTs, screening only gynaecological cytology, who are trained in-house with no structured training. In terms of accreditation, the IAC and EFCS-QUATE (Quality Assurance, Training and Examination committee) examinations are the only ones available for them. Two programmes, after either high school or 2 years at college, fill the gap: a 6-month rapid curriculum at some institutions, and 2–4-year bachelor courses in general technology have been proposed to the Higher Education Council by the Turkish Society of Cytopathology.

Training in Russia is apt to change every now and then (I.S.). Biologists with a university degree, technologists after medical college and medical doctors are involved in cervical screening, which is mostly opportunistic. The best situation is in so-called centralized cytological laboratories, where screening is performed, with LBC in some of them, where there is supervision of practical work and quality assurance, as well as teaching cytopathology after specialization in a faculty, institute or academy of post-graduate medical education. A new Ministry of Health is implementing LBC, but training is needed for conversion from conventional cytology, which is leading to problems in the university-based centralized laboratories. There is currently a dialogue with the Ministry because biologists with higher university education perform the screening, but some non-qualified biologists are now trying to report cervical samples, which needs to be addressed. Local guidelines are used, but examinations are needed. Guidelines are also needed in Croatia (I.K.-S.), which has a long tradition in cytology education dating back to 1968. Training is about to change from high school to university level. At present, the Ministry of Health provides 'post-high school' courses of 630 hours of gynaecological and non-gynaecological cytology, but these are not university-based.

The discussion led on to the need for university-based degree courses in general laboratory/biomedical science to allow CTs to be qualified broadly in order to take on the diverse activities ideally required of them. In some countries, this may take place unofficially. For example, in France (M.F.), where CTs do not officially exist, biology technologists train, albeit somewhat variably, in cytotechnology. There are 2-year bachelor diplomas, 3-year diplomas and local in-house training. On the positive side, formal technician training started 1 year ago and the Ministry of Health want the training to be homogenized as a 3-year bachelor biology training with cytotechnology for those who want it. This is the basis for training in Italy (P.Z.) and Poland (W.O.). In Italy, there is a biotechnology degree course and cytotechnology is taught as a university master's degree. There is no current undergraduate cytotechnology degree in Australia (A.F.), but all trainees entering cytotechnology must have a university degree, usually a BSc, BMedSci or similar, and then undergo supervised training in an accredited laboratory, either in a university hospital or a large private laboratory, to meet the requirements of the detailed syllabus established by the ASC, including a logbook of work and examinations after a minimum of 2 years of study. The ASC details specifications for gynaecological and non-gynaecological study, and there is a fellowship of the Australian Society of Technology in cytotechnology now available for senior CTs to pursue. In the Australian states, there are state-based industrial awards that have annual increments leading to senior CTs, but only one or two states recognize the fellowship for an increase in salary. In Poland, there is a 5-year university training in diagnostic laboratory techniques followed by 3 years of cytomorphology supervised by pathologists (W.O.).

As a final example of 'good practice' in cytotechnology training, we include a written submission from Ritu Nayar, current President of the American Society of Cytopathology, describing cytotechnology programmes in the USA:

> In the United States, cytotechnology training programs are offered at the baccalaureate and post-baccalaureate (certificate) levels and are located in both university and hospital/laboratory settings. Students may be admitted to a cytotechnology program in their junior or senior year of college or after they have completed their undergraduate studies. Specific course requirements vary somewhat among schools; however, 28 credits of sciences including chemistry and the biological sciences upon completion of a cytotechnology program and three of mathematics, statistics or equivalent are recommended.

Summary of requirements and challenges for cytotechnology training and practice

- *BSc-equivalent degree in general laboratory science/technology allows the diversity of in-house training and specialisation now required for cytotechnologists (CTs).*
- *Improved training in non-gynaecological cytology, cell preparation and ancillary tests (including HPV) is needed as these increase while cervical cytological screening declines.*
- *European Federation of Cytology Society (EFCS) guidelines for graduate entry as well as standardised general and specialist training in cytology would help in many countries.*
- *Pathologists and clinicians need to be convinced of the value of FNA cytology, that rapid on site evaluation is essential to make it cost-eective and that CTs have an important role in this in view of their expertise in cytomorphology.*
- *The relative lack of pathologists with an interest in cytology undermines its potential as a speciality and consequently undermines the role of CTs.*
- *The drive to laboratory centralisation could be detrimental to rapid on-site evaluation of FNAs.*

At this time there are 29 active training programs. In October 2013, the Commission on Accreditation of Allied Health Education Programs (CAAHEP) approved new entry-level competencies (ELC) proposed by the Cytotechnology Programs Review Committee (CPRC) – the new ELC put the curriculum on a modern footing to cover evolving areas of molecular medicine and digital pathology. The CPRC has collected resources to meet the new requirements; these are available on the Cytology Education Learning Lab (CELL) website http://cytologyedlab.org/.

Certification: Upon completion of a cytotechnology program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), in collaboration with the Cytotechnology Programs Review Committee (CPRC), students are eligible to sit for a national certification examination given by the American Society for Clinical Pathology's Board of Certification (ASCP-BOC). Successful completion of this examination indicates attainment of entry level proficiency in the field, and individuals are then recognized as CT(ASCP) – certified cytotechnologists. Additional certifications – specialist in cytotechnology (SCT) and molecular biology (MB) can be obtained.

At this time, the American Society of Cytopathology (ASC) and other co-sponsors of the CPRC are actively exploring future practice models for cytotechnologists/laboratorians with core skills in cytotechnology.

Details of the current guidelines are available on the ASC and CAAHEP websites: http://www.cytopathology.org/cytotechnology-programs/ and http://www.caahep.org/documents/file/For-Program-Directors/Cytotechnology%20Standards%202013.pdf

Summary

The discussion revealed a wide range of pragmatic solutions in Europe to specific training in cytotechnology and the absence of a standardized programme. The main requirements and challenges for cytotechnology training and practice are summarised above. The Board is grateful to their members from Australia (A.F.) and the USA (R.N. and H.E.) for providing details of their respective training programmes. There was general agreement that European guidelines for CT training were badly needed, especially for non-gynaecological cytology and in countries such as Croatia, Hungary, Russia and Turkey, where CTs do not yet have an established profession, and that now was clearly the time. The volume of gynaecological cytology screening is declining, the need for VTCTs involvement in ROSE of FNA is increasing and the range of tests carried out on cytology samples is expanding. The unique skill of CTs is accurate microscopy, and this can readily be, and often is, expanded to the pre-screening and assessment of FNA and exfoliative cytology samples. The training and practice of CTs depend on the expertise and commitment of medical pathologists, and so courses and diplomas in cytotechnology must necessarily be supplemented by in-house training based on a national or European-wide syllabus. With CT training added to a general university-based education in laboratory or biomedical science, a career in cytotechnology should be an attractive option involving a diverse range of laboratory and clinically based activities.

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