



The Royal College of Pathologists  
Pathology: the science behind the cure



British Association  
for Cytopathology



Institute of  
Biomedical Science

# **The role of biomedical scientists within the provision of a diagnostic cytopathology service**

## Contents

Introduction .....	3
Sample preparation .....	3
Reporting .....	4
Sample assessment for adequacy and triage for ancillary testing .....	5
Multidisciplinary team meetings .....	6
Continuing education/assessment/appraisal.....	6
Notes .....	6
References .....	7

## Introduction

Diagnostic cytopathology (still sometimes referred to as non-gynaecological cytology) is an integral part of cellular pathology and the provision of such a service involves a team of trained healthcare professionals. Since the original guidance, written in 2016, the service delivery of diagnostic cytopathology has altered dramatically. This is due to a combination of advances in medicine and service developments within and outside cellular pathology.

Historically, diagnostic cytopathology was provided by medically trained pathologists who would report and sometimes take samples, especially fine needle aspiration (FNA) cytology. Biomedical scientists and laboratory staff would typically receive and prepare the sample for reporting. This model has evolved significantly in recent years for many reasons and is paralleled by the development and acquisition of qualifications in diagnostic cytopathology by many biomedical scientist staff.<sup>1</sup> This includes the Diploma of Expert Practice (DEP) in Diagnostic Cytopathology\*<sup>2</sup> and the Advanced Specialist Diploma (ASD) in Diagnostic Cytopathology\*<sup>3</sup> through examination overseen by the Conjoint Board in Cytopathology (CJB), jointly administered by the Royal College of Pathologists (RCPath) and the Institute of Biomedical Science (IBMS). Holders of such qualifications are now fully accepted and integral to many cytopathology departments,<sup>4</sup> just as are those biomedical scientist staff holding the ASD in Cervical Cytology, histopathology qualifications in dissection and/or reporting in cellular pathology departments.

In many ways, these changes are not fully recognised in guidance. Given this, they require clarification to assist laboratories, clinical teams and hospitals in service provision.

## Sample preparation

Once a cytology sample is received into a laboratory it will be processed by biomedical scientists and/or other grades of laboratory technical staff, working to existing guidance and laboratory standard operating procedures (SOPs). Such SOPs should be produced and agreed within the laboratory in line with quality standards.<sup>5</sup>

## Reporting

Pre-screening of diagnostic cytopathology samples is undertaken in many laboratories, with biomedical scientists offering an opinion as to diagnosis prior to being reported by either a consultant pathologist or suitably trained/qualified biomedical scientist. This provides a valuable quality assurance and education/training opportunity.

Biomedical scientists who hold the DEP in Diagnostic Cytopathology are able to report out negative samples from respiratory exfoliative cytology, urine and serous fluids.

Biomedical scientists who hold the ASD in Diagnostic Cytopathology are able to report out both negative and positive samples from respiratory exfoliative cytology, urine and serous fluids.

The attainment of the DEP and ASD qualifications is advocated as independent external evidence of attainment of suitable skills in these areas.

The reporting of FNA cytology in the areas covered by the ASD in Diagnostic Cytopathology, such as an endobronchial ultrasound (EBUS) sample, is considered appropriate for consultant biomedical scientists who hold the ASD in Diagnostic Cytopathology and who demonstrate their competency in line with Cytology CJB guidance<sup>6</sup> and local departmental policies. Local practice is not constrained or confined to the scope of the examination and, if a decision is taken to report a wider range of samples, then protocols should be agreed against national and local assessments of competence.

Ultimately, the clinical lead for cytopathology is responsible for the issue of all diagnostic cytology results.<sup>7</sup> As is the case for pathologists, no biomedical scientists should be working in isolation, they should have access to colleague(s) for case discussion.

Departmental policies should cover the handling and reporting of diagnostic cytopathology samples and also how ancillary testing, if required, is undertaken and by whom.

It is important that all staff seeing diagnostic cytopathology at all levels see sufficient and regular material to develop and maintain their skills. This is vital for all trainees (pathologist or biomedical scientist) but also those in post and delivering a diagnostic service. Such

training can be augmented by participation in educational events, meetings, reading and membership of national cytology societies.

## **Sample assessment for adequacy and triage for ancillary testing**

Certain diagnostic cytopathology samples, including EBUS of mediastinal lymph nodes and FNA of many sites, are taken during specific clinical procedures by clinical teams, radiologists or pathologists. Rapid Onsite Evaluation (ROSE) is a service offered at such procedures, which involves an assessment of adequacy but often includes confirmation of sampling of diagnostic material and specimen triage for ancillary testing (molecular analysis, flow cytometry, etc). This ensures sufficient and appropriate material has been acquired for later definitive diagnosis and predictive testing.

Biomedical scientists with appropriate training, competency, experience and who hold the ROSE qualification<sup>8</sup> can offer such an assessment of sample adequacy and acquisition of sufficient and appropriate diagnostic material. This will frequently include a morphological assessment of malignancy but will not form the basis for definitive patient management, which will await a final diagnostic report by a pathologist or a biomedical scientist with the ASD in Diagnostic Cytopathology and additional competency as prescribed by the Cytology CJB for this area of FNA reporting.

In some services, a provisional diagnosis may be offered at ROSE, if this is deemed necessary for immediate patient management – for example, a diagnosis of small cell carcinoma leading to same-day initiation of chemotherapy. This may only be offered by a pathologist or a biomedical scientist with the ASD in Diagnostic Cytopathology and additional competency as prescribed by the Cytology CJB for FNA reporting and in line with national and departmental guidance as outlined above.

## Multidisciplinary team meetings

The majority of multidisciplinary team meetings (MDTMs) are cancer-related and offer an opportunity for the whole clinical team to meet and discuss all the relevant information concerning a patient to help arrive at the best individualised treatment option(s). Many of these will involve cytology and also histology. In most cases, it will require a pathologist or consultant biomedical scientist to report/review the cytology and histology. A consultant biomedical scientist may often attend and present at MDTMs, and stand in for a pathologist, and as such should be considered as a core member of the multidisciplinary team.

## Continuing education/assessment/appraisal

All staff require appraisal that covers their whole scope of work. For any consultant biomedical scientists in cytopathology, this is best done in a similar manner to medical pathologist appraisals. This will ensure their development, education and monitoring is the same, in this capacity, as a pathologist. It should include participation in relevant continuing professional development and showing evidence of this through audit, quality improvement activities, review of material and participation in relevant external quality assurance, etc. They should also be supported in their role with access to suitable training and education, as is appropriate to the departmental quality assurance process, departmental needs and individual roles.

## Notes

\*The DEP and ASD qualifications have historically been titled 'non-gynaecological cytology'. This has now changed to 'diagnostic cytopathology' for both qualifications.

## References

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