TOWARD COMMON STANDARDS OF COMPETENCE FOR THE EUROPEAN FORENSIC SCIENTIST

Michael J. FEREDAY

Forensic Science Service, London, United Kingdom

ABSTRACT: It is crucial for the health of forensic science that users of the services provided by forensic scientists can have complete confidence in the individual scientists involved.

Most laboratories will have schemes, often linked to training, which are designed to satisfy laboratory managers that their scientists are competent. The focus on competence in forensic science in the United Kingdom has moved from the simple provision of training to defining national standards against which competence can be assessed.

This paper outlines how such standards developed, explores the processes involved and considers the possibility of Pan-European standards of competence for forensic scientists.

KEY WORDS: Competence standards; Assessment.

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INTRODUCTION

My presentation will attempt to develop the concept of common standards of competence for forensic scientists across Europe. Why is it important to have such common standards? Because the most important people in the process are not forensic scientists but the users of forensic science – the law enforcement agencies and the criminal justice systems. They have the right to expect the same performance from forensic scientists irrespective of where that science is practised. How easy it is to achieve that is perhaps worthy of some debate.

I want to look at how we can define competence and how we can assess whether competence has been achieved. I then want to look at how we can extend this to the Pan-European dimension.

COMPETENCE

How do we define competence? I have come across laboratory directors who say "I know that my staff are competent". However if I ask them against what standards they have made this judgement they are unable to offer anything but a personal, subjective view of what a competent person would look like. That is a bit like asking someone to define an elephant, and receiving the answer that to do so is not necessary because they will know one when they see one! Thus it is impossible to define competence in any objective manner in the absence of standards.

What is competence and what is it not? Competence is about performing the role, for example of forensic scientist, competently. It is about demonstrating competence in the workplace and not the classroom, that is to say about actually doing the job. It is not, directly, about qualification and training. A highly qualified person need not be "occupationally competent".

Is there scope for having different standards of competence? Well yes there is, or at least there is scope for different approaches. For example the Forensic Science Service has developed standards. There is a United Kingdom national review as represented by the United Kingdom Forensic Science Liaison Group and there is an international view, for example from ENFSI. It is better to approach the situation from a global standpoint and reduce the variation that inevitably exists when individual organisations go their own way.

What is competence? It is a mixture of knowledge skills and the application of knowledge and behaviours or attitudes. All three are essential to defining competence.

Let us look at knowledge – scientific knowledge alone is not enough. It is important to know about forensic science itself and the forensic process and how to apply scientific knowledge to the solution of forensic problems.

As to skills, there are the application of technical skills and the application of "forensic skills", by which I mean assessment, interpretation and report writing. It is the "forensic skills" which are key – I refer to the modern forensic scientist as a "forensic data processor".

To complete the competence equation we have behaviours and attitudes. These are critical to a person's role, they indicate what a competent person should be demonstrating and they are the basis for job descriptions, training, performance monitoring, performance assessment and career development. It is possible to be skilled and knowledgeable but if you do not portray the right behaviours and attitudes you can not be classed as competent.

I want briefly to talk about the forensic process. I will describe it as a series of discrete steps between the apprehension of a suspect or investigation of a crime and the conclusion of an investigation at a court of law or tribunal.

What is the connection between the forensic process as I described it and competence? All individuals must demonstrate competence at all points in then forensic process. The chain of competence is built on the weakest link. The competence of the forensic scientist can be compromised if individuals working in other parts of the forensic process are not themselves competent. We need to be able to determine if such compromise has taken place.

Incompetent evidence collection or incompetent laboratory work results in the wrong results being delivered to the judicial system.

I believe that competence can be split into two. There are the "core competencies" which are relevant to all forensic scientists reporting casework and there are the "specialism – specific competences". Thus competencies for scientists reporting fibres casework and for scientists reporting DNA cases would have common elements.

STANDARDS

I want now to turn to standards. Standards are the key to everything. How do we define them so that they are meaningful? Should they be defined tightly? Should they be specific or generic? In my opinion there are dangers in making standards too specific. Generic standards are fine because they will be interpreted in the light of the specific specialism.

Standards define the "what" that has to be achieved or demonstrated by a competent person. They do not necessarily define how somebody achieves the standard. Some people expect the standard to spell out exactly what must be done but that is not the case. As an example of what I mean take a standard relating to the identification of drugs. The standard may state that a drug must be identified unequivocally. However it does not say which technique must be used to achieve the standard. There may be more than one possible way of achieving the standard. On the other hand there may be only one.

Who defines the standards. They can be defined under the guidance of professional bodies, regulatory bodies or learned societies. However they should be defined by practitioners.

ASSESSMENT

Once standards have been defined what happens next? We need to determine whether an individual has achieved the standards. We need a process of assessment.

How is assessment carried out? It must be carried out against the standard. It must be carried out objectively against the standard. There is no place for subjectivity in the assessment process.

Who carries out the assessment? The assessment is carried out by an assessor who is occupationally competent. The assessor understands and translates the standard to the particular area of specialism. It is important that there is a mechanism for independence in the assessment process.

REQUIREMENTS FOR COMPETENCY

What are the requirements for competency? First there are the standards. These express the expected level of performance. Secondly there is the assessment process. This is the check as to whether or not the expected level of performance has been achieved. If the standard has not been achieved then training is what is used to bridge the gap between actual and expected performance. The role of training comes after the standards have been defined, and not as some like to think before. It must be stressed that competence can be a transient thing. When one achieves competence, in practice it is at a particular point in time. Achieving competence does not necessarily imply any statement about the future. It is therefore necessary to consider the continual assessment of competence.

THE RELATIONSHIP BETWEEN COMPETENCE, CODES OF PRACTICE, CONDUCT AND ETHICS

Codes of Practice, Conduct or Ethics can be seen as part of the competence framework and in many cases are a form of standard. They are often defined by Professional Bodies, individual organisations, for example the Forensic Science Service or umbrella organisations such as ENFSI. Working to these codes can form part of a standard but are not enough on their own.

THE FSS APPROACH TO STANDARDS

The FSS has been involved in the development of occupational standards for ten years. We have developed our own standards, developed what we see as an objective assessment process. For new staff assessment has been based on the outcomes from training programmes. At the same time we have given total support to the development of national standards within the forensic science sector of the United Kingdom. While we are perfectly satisfied

that our standards are appropriate, we feel there is merit in demonstrating that our staff meet external, ie national standards. We see great value in benchmarking against national standards and using the concept of third party, independent assessment that a national framework brings.

THE DEVELOPMENT OF NATIONAL STANDARDS

In the United Kingdom there are many government funded National Training Organisations (NTOs). Forensic science falls under the Science Technology and Mathematics Council NTO, whose Chairperson, currently, is Dr Janet Thompson.

There are several committees representing different parts of the science sector which receive funding via this NTO. One of these is the Forensic Science Sector Committee – a committee representing users and suppliers of forensic science in the UK. This committee has developed occupational standards for many forensic specialisms e.g. evidence recovery, fibres, drugs etc. Meeting these occupational standards means an individual is competent. The key feature of the assessment process is the building of a portfolio of evidence gathered over time in the workplace, i.e. the laboratory, scene of crime and court.

As I said the FSS has been a key player in the development of national standards and is currently piloting the assessment process in the area of evidence recovery.

THE LINK TO ACCREDITATION

The FSS is accredited by both UKAS and BSI. Both accreditation processes focus on the laboratory, on systems and methods. Although training features as part of the accreditation the competency of the individual is not directly examined. The new ISO 17025 standard goes some way to addressing this. However, it is important to remember that accreditation of a laboratory does not of itself imply that the staff of that laboratory are competent.

The competence of the individual can be dealt with by schemes developed to accredit or certify individual scientists. For this to be of value, however, accreditation or certification must be on the basis of the individual demonstrating competence in the workplace on an on-going basis and not by dint of qualifications or training. Personal accreditation is a mechanism for giving the general public confidence in individual scientist. One could have a register of competent forensic scientists on a national or international basis. In the United Kingdom just such a register is about to commence registering

practitioners. This is the Council for the Registration of Forensic Practitioners (CRFP). A novel part of the process is the requirement to demonstrate continuing competence to remain on the register.

COUNCIL FOR THE REGISTRATION OF FORENSIC PRACTITIONERS (CRFP)

I only want to talk briefly about the CRFP. The key points relating to competence and assessment are that registration is based on demonstrating competent performance in the work place and assessment will be carried out by "occupationally competent" practitioners. Initial registration will be carried out against ten criteria – in effect the standards. These criteria are essentially generic standards and the assessors will translate them to the particular specialism. The ten criteria are as follows:

1. Knowing the hypothesis or question to be tested;
2. Establishing and confirming that the items submitted are suitable for the requirements of the case;
3. Confirming the correct type of examination has been selected;
4. Confirming that the examination has been carried out competently;
5. Summarising and collating the results of the examination;
6. Interpreting the results in accordance with established principles;
7. Considering alternative hypothesis;
8. Reporting the findings;
9. Presenting evidence to the court;
10. Ensuring all documentation is "fit for purpose".

A COMPETENCY BASED APPROACH TO RECRUITMENT TO RECRUITMENT AND TRAINING IN THE FSS

A competency based approach to recruitment and training was applied by the FSS in 1998 to recruit 100 trainee forensic scientists who were to report cases involving body fluids. The process involved an initial assessment centre focused around the need to demonstrate certain relevant knowledge, skills and behaviours, a modular training programme built around outcomes, and comprehensive competency testing. We found the whole process to be cost effective and, more importantly, the new recruits were productive much earlier. Such a competency based approach has many benefits:

– it focuses on the needs of the role,
– it identifies and helps prioritise training requirements,
– it guarantees successful outcomes,

– it clarifies training requirements for moves to other jobs,
– it provides a sound basis for reward systems.

PAN-EUROPEAN STANDARDS

I want now to turn to the concept of Pan-European standards. The Competence Committee (formerly the Education and Training Committee) of the ENFSI QA Group has developed a set of "core competencies" for the European Forensic Scientist reporting casework. To these core competencies must be added specialist competencies which need to be developed by each relevant ENFSI Working Group.

We found that the core competences could be grouped into four areas. These are:

– the fundamental elements of professionalism and ethics,
– the role of the expert,
– the investigative and judicial processes,
– casework management.

PAN-EUROPEAN STANDARDS – PROFESSIONALISM AND ETHICS

The standards grouped into the fundamental elements of professionalism and ethics are as follows:

– understand the history and underlying philosophy of forensic in general and the specialist area of practice,
– demonstrate how the underlying philosophy of forensic science is applied on a day-to-day basis to casework,
– understand the roles and responsibilities of forensic science and the forensic scientist in the Criminal Justice System pertinent to the country of practice,
– understand the roles and responsibilities of the various personnel in the national Criminal Justice System i.e. judges, prosecutors, police, defence lawyers, expert authorities and experts,
– know, understand and demonstrate a commitment to the ENFSI code of conduct and those of other relevant professional and organisational bodies,
– demonstrate an understanding of the potential for scientific evidence in general, and in the specialist area of practice, in criminal investigations and how it can be assessed.

PAN-EUROPEAN STANDARDS – THE ROLE OF THE EXPERT

The standards grouped into the role of the expert are as follows:

– demonstrate the ability to construct clear, impartial, written reports in accordance with the relevant standards and needs of the national system of justice and investigative authorities,
– conform to the relevant professional standards for the presentation of oral evidence to courts of law or tribunals,
– demonstrate that any advice or opinion provided is based on established scientific principles and is balanced and realistic within the context of the case and the information provided, or available to, the scientist,
– demonstrate an understanding of the role and responsibilities of the expert in the legal process in a court of law or tribunal.

PAN-EUROPEAN STANDARDS – THE INVESTIGATIVE AND JUDICIAL PROCESS

– Understand the relationship between the forensic scientist and the police or investigative authority,
– demonstrate an understanding of the role of scene of crime examiners in relation to the scene examination and the collection of evidence and the role of other specialist departments such as fingerprint bureaux, narcotic squads etc.,
– demonstrate an understanding of how evidence can be compromised at a scene of crime and how it can be avoided.

PAN-EUROPEAN STANDARDS – CASEWORK MANAGEMENT

– Understand the relevance of quality assurance to forensic science,
– demonstrate the ability to work as part of a laboratory team and with investigators and service providers,
– understand the importance of databases in the field of practice relevant to the forensic scientist and their use in casework,
– demonstrate an understanding of the need for security of exhibits so as to prevent contamination, loss of evidence and tampering,
– understand the concept of matching the quantity of work done to the purpose for which it is required,

– understand and demonstrate the working practices necessary to avoid contamination and to maintain integrity throughout a laboratory examination,
– demonstrate an understanding of the way in which forensic science evidence is evaluated by a comparison of different hypotheses using methods such as Bayesian statistics,
– demonstrate the appropriate way to deal with organisations and persons communicating in writing and by telephone,
– understand and describe the relevance of continuity in the evidential process and how this can be compromised,
– work in such a way that the health and safety of ones self and others is not compromised.

IN CONCLUSION

Thus we have developed Pan-European Standards which we believe can be applied across Europe and indeed across the world.

Are they needed? Yes most certainly if we are to move to the goal of the same quality and standard of forensic science irrespective of where it might be practised.

Are they workable? Yes I believe that they are.

Can they be assessed? Again my answer is yes, by an assessment process which will examine the knowledge and, most importantly, the performance in the workplace.

I believe the future is not only about competence but about being able to demonstrate to the world at large that we are competent. I believe the work that we have done in the Competence Committee has laid the foundation for taking competency and its assessment forward across Europe and beyond.