

Importance of quality assurance in forensic science



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Introduction

How important is 'Quality' in Forensic Science? Some may say 'Quality' is very important and others may disagree. The purpose of this essay is to outline the importance 'Quality' has in Forensic Science and whether 'Quality' is practiced in all Forensic settings. What is Quality assurance? Quality assurance is the basic maintenance of a specific level of Quality within a working practice, designed to ensure attention to detail is achieved and products are free of faults (5). In this case Quality assurance has become an essential element of modern forensic science (8), it is guarantying that a consistent set of standard and integrity and the level of maintenance is achieved and sustained throughout Forensic science establishments. This means ensuring that reliable and accurate testing are undertaken at all times (6). Quality assurance involves Quality control checks to be done to confirm that test results obtained are accurate and reliable (6) which guarantees that the standard of Quality is being maintained.

Forensic Science has an important part to play in criminal investigations when a case is taken to court. Forensic science involves the search for and examination of evidence which can be useful in securing convictions (1). It is a very important aspect as it relies on science testimonies rather than witness statements. In order for Forensic Science to be fully relied on within a case, the Quality of the Laboratory where the evidence is examined should be an appropriate operating working standard (Quality assurance).

Main

Why is Quality deemed to be important? Well if Quality assurance and control are not programmed within an establishment such as a Laboratory, many companies will end up customising their own policies. This will only result in random testing being done and different interpretations being met that will not coincide with each other. But why is this important in Forensic Science? It is important in the Forensic science setting because if every laboratory adopted their own policies, for example how evidence is tested and what conditions they are tested in, when evidence is presented in court there could be questions on ' how do we know what conditions evidence is tested in (could there be contamination) and if protocol and procedures used by this company is right'. In order for standard of procedure to be maintained, I believe it is important that all Laboratories that handle evidence are accredited and use the same procedures and policies throughout to ensure all results are co-insistent with each other.

Andrew Rennison the Forensic Science Regulator from 2008-2014, main job was to ensure that all Forensic Science services had the appropriate regime of scientific quality standards (2). Over the years he improved or made new standards of quality to ensure Forensic science services such as Laboratories underwent accreditation. He wanted to ensure that all crime scene evidence were being tested in the best (accredited) Laboratories there were. However under the time Andrew Rennison was the Forensic Science Regulator there were many Laboratories that were handling criminal evidence without being officially accredited. Could these results of evidence pieces be fully relied on? Why weren't these Laboratories accredited?

Accreditation is the means of assessing the reliability and integrity of an organisation such as a Laboratory ensuring it meets the specific requirements in order to reduce risks under the international accreditation standards (3). The organisations which appoint accreditation are called 'accreditation bodies' (4). There are many steps that are taken for a company to gain accreditation. One of the first steps requires registry, this involves money. Could this be the reason why many Laboratories are not accredited? Well in 2013 many companies lost accreditation, not because they were dirty and seen as unreliable with evidence testing but due to a failure of not paying the fees. Accreditation seems to be a voluntary process, but how does one know if the level of Quality is being maintained in a company were accreditation has not be achieved? Surely it should be compulsory, especially for Laboratories that are handling evidence that may be presented to court.

Are accredited Laboratories better to use than the non accredited ones? Well that is a personal opinion. Put yourself in this situation, evidence presented against you. Would you want it to be tested in a Laboratory, where the standard of quality is high as they have passed inspections and gained an accreditation certificate or in a Laboratory where the quality of the Laboratory is unknown and they have not gained accreditation, due to not paying fees or some other reason?

In London right now there are many Laboratories that are in the process of gaining accreditation, but are still undergoing evidence testing. Although accreditation has a big part to play with the maintenance of quality, there are other factors that affect quality standards. For example the closure of the

Forensic Science Service (FSS) had an effect on quality in the Forensic
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science industry. This was because many small companies had the pressure placed on them and were given a heavier workload which lead to many mistakes occurring, questioning their standard of quality (7).

What happens if Quality is not maintained? Well there are many cases where poor quality standards in a Laboratory have caused cases to be reviewed or collapse, this is due to the Forensic evidence being examined and tested inappropriately or with possible contamination. There are also cases where good standard of quality has lead to evidence being tested correctly and lead to convictions. For example the convictions made in the Stephen Lawrence case was due to the extensive work and excellent standard of quality both in the Laboratory and the scientists work. Analysis was done on a jacket and sweatshirt worn by the suspects in the case, twice in 1993 and 1995. Both times scientists found no conclusive evidence. Could this have been due to the way in which quality was controlled in Forensics? Well in 2006 all evidence items in the case was submitted to LGC Forensics (9), at this time the Laboratories used were all accredited and so were deemed to comply with the standard of quality (10). Not only did the Laboratory and the scientists find DNA particles, they also found hair and 7 fibres from the sweatshirt, where 6 matched the victim's trouser and a lone fibre which matched the victim's polo shirt (11). Another 16 fibres were found on the jacket of the second suspect which was also a definite match to the victim (9). Surely the two failed attempts of not finding any evidence could have seen the suspects get away with murder if the LGC Forensics an accredited Laboratory had not got involved.

However although LGC Forensics were credited for the great work they undertook in the Stephen Lawrence case, this company was put under scrutiny in 2011 when a suspect was wrongly convicted of rape. The evidence submitted to the Laboratory was later shown to have an error of contamination during the time the evidence was tested (12). This shows that although a Laboratory is accredited and is believed to have a high standard of quality, there can be many situations where the standard of quality can be flawed.

Conclusion

In this essay the importance of quality in Forensic science has been explored. How accredited Laboratories have had good standard of quality and also how accredited Laboratories have failed in maintaining their quality has been discussed. When quality within a Forensic setting falls below a certain standard mistakes such as contamination in the rape case seen above can occur. If quality is to be maintained throughout, more routinely checks should be done by both the Accreditation bodies and owners of companies. This will ensure the level of maintenance needed is maintained always, all standard procedures are being followed for testing done by new and existing scientists and equipment is thoroughly checked and cleaned to prevent contamination. The standard of quality may have dropped when the FSS was closed, as they received heavier workloads which lead to them making many mistakes but also because many experienced and knowledgeable scientists in specific areas were left without a job. Although the standard of quality may have dropped, I believe the standard of quality has risen in the Forensic world as cases such as Stephen Lawrence, would

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not have had the breakthrough it did if the standard of quality in the Laboratory was low and if the quality undertaken by the scientist's did not reach the levels needed in today's Forensic science services.

Hopefully in the future there will be a rise in the number of accredited Forensic Laboratories so maintenance of quality can be somewhat controlled as I believe quality has a significance importance within Forensic science.