

Andrology Lab Corner*

Raising Standards in Semen Analysis: Professional and Personal Responsibility

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Studies by Keel ([2004](#)) and Brazil (Brazil et al, [2004a, b](#)) have once again reminded us that quality control is the cornerstone of the andrology laboratory. To put this in context, numerous reports document unacceptable discrepancies between different laboratories and even between different individuals, although fewer studies attempt to address these issues. So, what is wrong?

Clear laboratory guidelines address laboratory techniques and quality control procedures. For example, the World Health Organization manual ([WHO, 1999](#)) outlines the basis for standardized techniques and practices, and the NAFA-ESHRE manual ([Kvist and Björndahl, 2002](#)) provides more detailed instructions for the techniques recommended by the WHO. These detailed procedures allow further standardization based on the techniques taught at ESHRE Basic Semen Analysis Courses within and outside the European Union ([Punjabi and Spiessens, 1998](#); [Vreeburg and Weber, 1998](#); [Björndahl et al, 2002](#)). Also, a number of practical suggestions on how to run training programs within a clinical laboratory setting have been made, and solutions have been implemented successfully (eg, Mortimer, [1994a, b](#); [Franken et al, 2003](#)).

We have to ask ourselves: What is it that so efficiently hinders the improvement of quality in the andrology laboratory? A major factor must be a lack of knowledge and understanding of what is required—within the laboratory profession and among its customers (cf. [Edwards, 2004](#); [Figure 1](#)). Two main directions of development are therefore crucial. Laboratory staff need to understand the reasons for and the practical aspects of the recommended techniques (eg, [WHO, 1999](#)). Clinicians (the end users) need to know what should be demanded from laboratory services in terms of quality. If both these developments are not achieved, the current low performance in many laboratories will make semen analysis an undervalued and out-of-date procedure (cf. [McDonough, 1997](#); [Figure 2](#)).

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"... most standards also involve discipline on the part of human participants, who are notoriously apt to misunderstand and resist."

Paul N Edwards, 2004

Figure 1.

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"We have come to the end of something, surely someone will want to carve a headstone for traditional sperm analysis or perhaps a mausoleum would be more fitting."

Paul G McDonough, 1997

Figure 2.

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A frequent objection against training and quality control activities in the andrology laboratory is that it takes too much time and therefore costs too much. However, what is the cost of using results obtained without proper techniques and quality control? In a competitive world, it is essential that the clinician understand enough laboratory science to be able to choose laboratory services that provide high-quality analyses. If there is a demand for quality and it is used as a benchmark, the laboratory profession will find it easier to justify further training of staff and investment in quality control. In this context, it is critical to remember that semen analysis is a diagnostic tool, and as such, the results are used to guide patient treatment. Poor technique will undoubtedly lead to the wrong diagnosis and inappropriate therapy.

The basis for standardized laboratory andrology is well described. For example, the ESHRE Basic Semen Analysis Course provides a good example of a standardized course that offers training in the basic techniques. However, no laboratory staff can be trained to satisfactory levels in a 4-day course. After an introductory course, further training is mandatory until the individual is fully trained. This can only be done with serious commitment. To support continued training "at home," the ESHRE external quality control (EQC) scheme is developing sets of training material—similar to that sent out for EQC assessments, but with target values obtained from reference laboratories in the EQC scheme. After a sufficient period of in-house training and practical work, the individual would be expected to be fully trained, and it is from this point that participation in proficiency testing is of real value to monitor assessing skills.

When proper training has been completed, IQC should be implemented as a tool to decrease inter- and intratechnician variability and to ensure that technical skills are maintained at a high standard.

Finally, EQC should be introduced to monitor proficiency in relationship to other laboratories. Although considerable work is still to be done regarding standardization of EQC schemes ([Cooper et al, 2002](#)) and fine tuning of the WHO recommendations ([Björndahl et al, 2003](#), in press), these relatively minor aspects are not adequate apologies for not complying with the recommendations that already exist ([De Jonge and Barratt, 1999](#)).

Conclusion

There are no excuses for not improving the standards in laboratory andrology: detailed descriptions of robust, reliable techniques and procedures already exist. Although improvements can be made in the existing guidelines, protocols, and quality control systems, these systems provide much better tools than other, nonstandardized procedures ever can. Although each laboratory performing semen analyses must take the responsibility to implement proper techniques and training, the professional and scientific bodies (eg, the American Society of Andrology, ASRM, and ESHRE) must collaborate to unite on standardized education of laboratory staff and clinicians, as well as on standards for EQC and proficiency testing. Our patients deserve a high-quality professional service.

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Footnotes

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