Quality Control Counts With In-clinic Veterinary Labs, Heska and Abaxis Say

See why quality control and assurance need improvement.

By Lou Anne Epperley, DVM

All blood analysis equipment has a propensity for certain errors. It's just that reference laboratories are usually better at catching them, said Leslie Sharkey, DVM, Ph.D., diplomate of the American College of Veterinary Pathology and president of the American Society of Veterinary Clinical Pathologists.

"Quality assurance programs in reference labs usually include running high, low and normal control materials purchased from the manufacturer of the analyzer or another commercial source at regular intervals, often about once a day," she said. "We graph the data over time to make sure that we are getting the expected results and to look for trends that might indicate the analyzer is developing a problem.

"In addition, many reference labs participate in external quality assurance programs in which labs are sent 'unknowns,' which we test and then return the results to the program," Sharkey continued. "The program lets us know how our results compare with other participating laboratories so we can gauge our performance."

Kendal Harr, DVM, MS, Dipl. ACVP, owner of a private pathology consulting firm, said quality control programs for in-clinic blood analysis equipment would frequently be considered substandard to measures taken by reference labs. A recent survey she co-authored for the online Veterinary Information Network showed that the majority of responding vets recognized the importance of quality control programs for in-house lab equipment, but less than half had set up a program.

Of those who had not, almost 60 percent of responding veterinarians said "in some way" that they didn't know how, she said.

"Few clinical pathology courses teach quality assurance to veterinary students at all," said Harr, owner and clinical pathologist for URIKA LLC in Mukilteo, Wash., a consortium of board-certified consultants who specialize in high-quality diagnostics and quality-control consultation.

"During their veterinary medical education, veterinarians do not receive training that would enable them to manage the equipment that they purchase," she added. "They are, therefore, poorly prepared to be a discerning customer when sales representatives come to sell their wares."

Sharkey, an associate professor at the University of Minnesota College of Veterinary Medicine, said in-house lab work tends to lack the back-up infrastructure comparable to reference laboratories.

“The companies make the machines, they service the machines and give support, but their specialty really isn’t quality assurance,” she said.

Veterinarians depend on manufacturers for quality assurance and control education, Harr said, “which is important, but should be just one facet of the quality-assurance knowledge base in the facility if there is to be an in-house laboratory. They also are taken unaware when sales representatives try to sell them different products, which include reagent contracts, and lack any mention of an appropriate quality assurance program.”

Spotty quality assurance with onsite veterinary lab equipment was recognized by Heska Corp., which issued a technical brief addressing the issue and highlighting its True QC protocols for hematology, chemistry and blood gas analyzers, said Janet Kellogg, senior director of corporate communications.

“Regular quality control programs have been slowly and ineffectively integrated in the daily routine of the veterinary facility,” acknowledges the brief. “Without regular QC, critical factors such as reagent reactivity, automated sample pipetting, reaction temperature and the instrument itself are left unchecked.

“Manufacturers enable this casual approach to quality control by stating, or implying, their respective systems do not require QC,” the document continues. “This statement is misleading and contrary to the American Society of Veterinary Clinical Pathology guidelines.”

Frequently invoking ASVCP guidelines, the Heska brief also states: “Failure to institute an appropriate quality control program ignores recognized procedures used by professional laboratories, and exposes both clinicians and patients to questionable and potentially erroneous test results.”

“If the analyzer does not have an advanced quality assessment system, or a way to easily verify that the instrument performed correctly, then how can you ever use those results? You can’t with any certainty, and that affects your quality of care,” added Craig Tockman, DVM, professional services director for Abaxis North American Animal Health.

Or, to put it bluntly: “Simply stated, numbers generated by an analyzer are only as good as the instrument’s controlled performance, regardless of the technological sophistication,” Heska stated.

The cost of operating a well managed in-house lab is frequently “grossly underestimated,” Harr said.

“Practitioners have been caught in reagent purchase requirements which are very costly, as they are not familiar with actual usage and expiration of these products,” she said. “This can result in the use of expired reagent, which is obviously against all guidelines and results in imprecise, inaccurate and poor-quality results.”

Harr previously chaired the American Society for Veterinary Clinical Pathology’s Quality Assurance and Laboratory Standards Committee. She is chairman of the society’s Methods Validations Subcommittee.

“In summary,” Harr said, “while in-clinic laboratories have the potential to improve diagnostic medicine, currently in practice, they frequently do not.”

Sharkey agreed that quality control and assurance for in-house veterinary labs need improvement, and said recommendations are forthcoming from the veterinary clinical pathology society.

Meanwhile, electrolyte measurement errors are encountered most often in Harr’s consultations on VIN.

“Electrolytes very commonly require quality controls potentially on a daily basis, which are frequently not run,” she said. “Platelet analysis is also notoriously inaccurate using in-house machines, and frequently requires manual evaluation with trained personnel in reference laboratories.

“All instruments do need quality control performed over time, though the details may vary from instrument to instrument,” Harr continued. “If your salesman tells you that the equipment never needs any quality assurance, look them in the eye and tell them that they are not following ASVCP guidelines. Again, it is buyer beware.”

http://www.veterinarypracticenews.com/September-2012/Quality-Control-Counts-With-In-clinic-Veterinary-Labs-Heska-And-Abaxis-Say/