**Are we aware enough of Laboratory Ethics in Microbiology Laboratory?**

Laboratory medicine, like other areas of medicine, is obliged to adhere to high ethical standards. There are particular ethical issues that are unique to laboratory medicine and other areas in which ethical issues uniquely impact laboratory practice.

The professional personnel of a medical laboratory are bound by the ethical codes of their respective profession. Personnel responsible for the management of medical laboratories, as with other health professionals, have responsibilities over and above the minimum required by law. (1)

In compliance with standard 15189, ethics is incorporated for health laboratories. Where it stipulates that one must have responsibility for the design, implementation, maintenance and improvement of the quality management system, including policies and procedures to ensure protection of standard 15189, integrate ethics into quality management systems, where it is stipulated that clinical laboratories must work for the suitability, the rights of patients and

the control of internal and external quality assurance procedures. (2)

According to ISO 15189 2012 Section 4.1.1.3 of the document summarizes the ethical conduct expected in laboratories. The document states that laboratories should have in place means to ensure that: (3)

* *There is no involvement in any activities that would diminish confidence in the laboratory’s competence, impartiality, judgment or operational integrity*
* *Management and personnel are free from any undue commercial, financial, or other pressure and influences that may adversely affect the quality of work*
* *Where potential conflicts in competing interests exist, they shall be openly and appropriately declared*
* *There are appropriate procedures to ensure that staff treat human samples, tissues or remains according to relevant legal requirements*
* *Confidentiality of information is maintained*

The personnel and the laboratory management should be aware and educated for being far away from any financial and other pressure affect. There should be no conflict. If there is, it should be declared. Any patient’s sample (before and after it’s used for testing) procedures should be applied according to ethical codes of the laboratory and legal requirements. Ethics code is a guide of principles designed to help professionals conduct business honestly and with integrity. This ethical code should be declared as the other procedures of the laboratory. Confidentiality of information must be sustained during all the procedures in the laboratory.

The medical laboratory professionals are an integral part in diagnosing the infectious disease,

susceptibility to treatment, monitoring surveillance programmers and research response. The personnel of laboratories working in clinical and /or research are bound by the ethical codes of their respective profession. Laboratories must comply with the ethical code of conduct prescribed by international and national statutory bodies and address the ethical, social and legal aspects in biomedical science.(1)

Although many clinical laboratorians do not see or treat patients, they must be held accountable to the highest ethical and professional behavior. Recognition and understanding of ethical issues are essential to ethical practice of laboratory medicine.(4)

Microbiology, as a discipline, has a commitment to society, and the community it serves. On one hand, there are issues of financial accountability to justify the funding that the discipline receives. On the other hand, there are equally important issues of ethical accountability to justify the appropriateness of behaviour of microbiologists in a given situation. Guidance for ethical accountability can either be derived from “descriptive ethics” which denotes the way

different cultures respond to ethical questions or it can be obtained by reference to a compilation of “normative ethics” assembled from statements about what is “right behaviour”

or what is morally or legally accepted as “correct.”

Ethical issues facing microbiologists could be considered in two parts. The first relates to the way in which microbiologists work—the process, or means, of doing microbiology work. The second pertains to the practical and theoretical objectives as the products of microbiology work and the community they serve. Because some of these activities generate serious ethical concerns, both in practice and research, it would be salutary if microbiologists are

equipped to meet these issues in a prepared and measured way.(5)

Risk assessment in the clinical laboratory is complicated by the nature of the laboratory, with multiple processes and diverse and sophisticated instrumentation. Experience with

emerging pathogens in less-developed places of origin is not necessarily helpful for modern clinical laboratories. Risk assessment and mitigation in the clinical laboratory, especially

early in the course of an outbreak, will involve a difficult set of choices based on incomplete data and often-conflicting guidance from professional and public health authorities and

may require balancing risks to staff and to patients. Medical laboratory workers, as a distinct and unique group of health care professionals, have a duty to care for patients with

emerging infectious diseases, but that duty is balanced by the equal duty of health care systems and society to minimize the risks they must undergo in its course. (6)

Who makes the decisions on which risks are acceptable for laboratory workers? Who decides what risks to patients are acceptable to protect laboratory workers or to protect other patients?

These concerns can be addressed by integrating laboratories into planning and incident management processes, by developing ethical guidance specific to the laboratory, and by improving our knowledge of clinical laboratory biosafety to reduce uncertainty. (4)

The unique role of laboratorians, who care for patients but interact mainly with their samples rather than the person, creates distinct ethical dilemmas. In addition, laboratories function as critical parts of complex health systems, and the interaction of the laboratory with the greater healthcare system creates additional points of ethical friction. (7)

Maintaining a standard of ethics would enhance the reputation of the discipline. A high

standard of ethics would lead to a positive public perception, and the field of microbiology

would certainly benefit from it. (5) As a SOP, the ethical code should be written and declared among the laboratory personnel. It is very important to include ethics lectures in the education of all healthcare professionals working in laboratories. Teaching the principles of ethics will result in graduation of more successful laboratory personnel, and ultimately, a better laboratory service for the public.(8)

**REFERENCES:**

1. Mohamed M, El- Nageh, Linehan B, Cordner S,Wells D, Mc Kelvie H. Ethical practice in Laboratory Medicine & Forensic Pathology. WHO Regional publications; 1999 p. 11–41.
2. Garcia-Solis Eduardo. The Bioethics in the Clinical Laboratory. Acta Scientific Microbiology 1.5 (2018): 75-77.
3. ISO 15189:2012 Medical Laboratories – Requirements for quality and competence. <https://www.iso.org/obp/ui/#iso:std:iso:15189:ed-3:v2:en> Accessed 30 January 2020.
4. Gronowski AM, Budelier MM and Campbell SM. Ethics for Laboratory Medicine, Clinical Chemistry 2019; 65:12
5. Desikan P, Chakrabarti A, Muthuswamy V. Ethical issues in microbiology. Indian J Med Microbiol 2011;29:327-30.
6. Dubov et al. Ethics of Emerging Viruses in the Laboratory. Arch Pathol Lab Med. Vol 140, February 2016.
7. Dintzis SM, Stetsenko GY, Sitlani CM, Gronowski AM, Astion ML, Gallagher TH. Communicating pathology and laboratory errors: anatomic pathologists’ and laboratory medical directors’ attitudes and experiences. Am J Clin Path 2011;135:760 –765.
8. Gürol, Y., Vatanoğlu, E. and Çelik, G. How are ethical issues in the laboratory medicine held in Turkey? A perspective view through medical ethics and clinical laboratory science. Turkish Journal of Biochemistry, (2016); 42(1); 107-109.