

SJMLS-2(4)-2017-005

Current Review on Infamous Practices in Medical Laboratory Science Profession

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Summary

Th term infamous is well known for some bad quality or deeds. Wicked, abominable, outrageous, disreputable, ill-fame, discreditable, shameful, dishonorable, scandalous, heinous, vile and unspeakable. Infamous practices could mean a lot of disreputable qualities, infamous practices dishonorable and disreputable practices by professionals. Impact of Laboratory testing error on patient health, medical diagnosis and therapy greatly depend on laboratory test results and test result errors can expose patients to a significantly higher risk of inaccurate diagnosis and improper treatment. Incidents of failure to follow manufacturers' instructions may occur in as many as 60,000 laboratories and that this may "potentially harm patients.

Keywords: *Infamous, practices, medical, laboratory, science, profession*

Introduction

Infamous is a term to describe some bad quality or deeds. It is a wicked, abominable, outrageous, disreputable, ill-fame, discreditable, shameful, dishonorable, scandalous, heinous, vile, unspeakable act. Infamous practices could mean a lot of disreputable qualities. Infamous practices therefore, means dishonorable, disreputable practices by professionals (Rodney,

2015). Skill is often seen as an attribute of individuals. It is not just knowledge but the "ability to do something well". Skill almost invariably entails invention and is contextual. Since skill is hard to measure people often use "years of schooling" as a substitution for skill possession. But this view can be very misleading (Smith, 2006). A Medical Laboratory Scientist is that person who studied Medical Laboratory Science and has been licensed to carry out medical laboratory test or diagnosis (Farr *et al.*, 2004).

Due to the complexity of laboratory medicine and its significance in quality patient care, it is mandatory that medical laboratory personnel possess the qualifications necessary to ensure their professional competence. Licensure and certification programs not only set minimum standards for medical laboratory personnel working in clinical laboratories; they also help ensure quality laboratory testing and proper patient care.



Licensure versus Certification

There are two types of occupational regulation: licensure and certification. The two terms are often confused with each other but they are not interchangeable.

Certification by governmental entities is also sometimes confused with certification by non-governmental (private) organization. Certification is defined as being a less restrictive form of occupational regulation than licensure. Health care personnel can be certified without being “licensed,” as is the case with many clinical laboratory personnel.

Licensure is the most recognized type of occupational regulation. Licensure refers to the right given by a governmental agency or individual to engage in a legally defined occupational scope of practice. Licensure can address the preservation of a licensee’s skill through continuing education and/or proficiency requirements. It can also “provide a universal standard for entry-level personnel (Occupational Regulation, 1999).

It is an established fact that laboratory operations, including testing, have a major role in evaluating and handling patient health. The mandatory employment of certified laboratory workforces would have ensured that individuals with adequate training were doing that laboratory testing. Technicians only requires a high school diploma to perform moderately complex testing such as performing blood types on patients needing blood transfusions, drug screens and complete blood counts with a microscopic white blood cell differential. These individuals are not trained to diagnose leukemia cells on a blood smear. These are life-altering services that must be correct.

With children, misdiagnosis can lead to advanced disease progression and in some cases increased rates at which diseases are transmitted, more hospital admissions, longer hospital stays, increased healthcare costs and an overall negative impact on public health. Rapid, accurate laboratory testing decreases healthcare costs. Important, and often critical, medical decisions are made based on the results of laboratory tests. Inaccurate tests lead to unnecessary treatments and reduce patient confidence. Simply put, patients get treated correctly and more quickly with accurate laboratory tests. In turn, patients are released from hospitals faster, and patients treated outside the hospital require less costly treatment. Inaccurate tests are a particular concern for vulnerable populations such as children and the elderly.

In our global world, emerging and reemerging diseases are arriving at our doorstep more than ever. Clinical laboratories and qualified, licensed personnel are needed as with the recent Ebola outbreak, measles and healthcare associated infections such as MRSA and *Clostridium difficile* (C. diff). Laboratory Scientist play a vital role in potential bioterrorism and pandemic (influenza) threats from influenza and other infectious diseases (State-Mandated Licensure of Laboratory Personnel, 2005). While most hospitals and clinics in Nigeria can be trusted to hire suitably educated and certified laboratory professionals, there is a concern that medical laboratories are beginning to hire non-certified workers in response to a growing shortage of qualified laboratory personnel. This issue is about public safety, quality health care and increased health care cost. There is no guarantee that your medical laboratory tests are being performed by qualified medical laboratory personnel. A lack of licensing denies access to scholarships and other funding provided for other higher

education students, such as for the radiographers shortages that are very similar to our own.

Infamous Practices as it Affects Various Steps in Laboratory Practices

Pre-analytic

This the first step of laboratory diagnosis, if anything goes wrong here with the pre-analytical stage, the scientist will have wrong results. A lot of errors could arise from the pre-analysis of patient samples when the collection center is staffed by unskilled personnel in the area of medical laboratory practices. Pre-analytical errors can arise from improper labeling of sample container, wrong sample container, wrong fixative of choice and so on. All of these errors are bound to happen when the laboratory personnel are not licensed to practice. We have heard many cases of chemist, biochemist, microbiologist, doctors, pharmacist posing as a Medical Laboratory Scientist. Some pharmacist having a small laboratory in their shops and performing laboratory test themselves. Hospital with laboratories being staffed by a non- Medical Laboratory Scientist such as Pharmacist conducting laboratory diagnosis, Chemist running laboratory test and issuing laboratory test result, nurses taking the job of a Medical Laboratory Scientist, so many infamous and sharp practices putting the Nigeria populace at risk of misdiagnosis.

Analytic errors

This includes machine malfunction, unqualified personnel handling analysis, the use of expired reagent, economizing reagent, improper storage of laboratory reagent for analysis and so on. Also, the technician can fail to follow standard operating procedure or incorrectly identify or classify cells under the microscope.

Post-analytic errors

Errors transferring data to computer files, transcription errors and physicians misread result. Ways to minimize errors or infamous practices in medical laboratory practices include;

1. By employing the services of a qualified Medical Laboratory Scientist to effectively run medical laboratories.
2. Routine accreditation of all Medical Laboratories, Hospitals and Pharmacy where laboratory services are carried to out to ensure that standards are met and to tackle the virus of quackery.
3. Implementation of a national external quality assessment program or control in all laboratories in secondary and tertiary health facilities.

Impact of laboratory testing error on patient health medical diagnosis and therapy greatly depend on laboratory test results, and test result errors expose patients to a significantly higher risk of inaccurate diagnosis and improper treatment. A CMS study of waived testing laboratories indicates that incidents of failure to follow manufacturers' instructions may occur in as many as 60,000 laboratories and that this may "potentially harm patients (Certificate of Waiver and Provider Performed Microscopy Procedures Pilot Project Overview, 2001). Without adequate training of laboratory personnel, the likelihood of inaccurate test results increases (Stull *et al.*, 1998). A study of problems in laboratory testing in primary care estimates that more than 16 percent of incorrect test results affect patient care. HCFA suggests that these patient care impacts include delays in receiving appropriate care and the possibility that inappropriate or harmful diagnoses or treatments could result in injury or death (Nutting *et al.*, 1996).



Conclusion

There are several infamous practices in the practice of Medical Laboratory Science profession in Nigeria. Employing the services of a non-qualified Medical Laboratory Scientist, errors in the pre-analytical, analytical and post-analytical phases as well as failure to follow standard operating procedures and manufacturers' instructions can potentially result in the generation of wrong and incorrect laboratory result and prevent clinicians from making the right informed decision leading to misdiagnosis, wrong treatment and possible harm to patients. There is an urgent need for government to invest significantly on the training of qualified Medical Laboratory Scientist. This will help mitigate the shortages in the number of qualified Medical Laboratory Scientist in the country that often compel laboratories to employ non-qualified and certified professionals to work in medical laboratories. The Medical Laboratory Science Council of Nigeria should double her effort to ensure prompt and routine accreditation of all Medical Laboratories, Hospitals and Pharmacy where laboratory services are carried out to ensure that standards are met and to tackle the virus of quackery. There is also need for the council to fully implement of a national external quality assessment program in all laboratories in secondary and tertiary health facilities.

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Certificate of Waiver and Provider Performed Microscopy Procedures Pilot Project

Citation: Omorodion, N.T., Achukwu, P.U., Umeh, G. U., Igharo, E.A. Current Review on Infamous Practices in Medical Laboratory Science Profession. *Sokoto Journal of Medical Laboratory Science*;2(4): 40 – 44.

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