

Outcome of Orientation Exercise for Medical Laboratory Scientist Interns in a North Central Tertiary Health Institution in Nigeria

S.A. Benard¹, A.A. Fowotade¹, O.O. Afolabi², O. A Olutunde¹ E.O., Oloyede ¹

1. Histopathology Laboratory, Pathology Department, University of Ilorin Teaching Hospital, Ilorin, Kwara State, Nigeria.
2. Department of Pathology, Faculty of Basic Clinical Sciences, University of Ilorin, Kwara State, Nigeria.

doi: <https://doi.org/10.37745/ijirm.14/vol13n15259>

Published September 06, 2026

Citation: Benard S.A., Fowotade A.A., Afolabi O.O., Olutunde O.A., Oloyede E.O. (2026) Outcome of Orientation Exercise for Medical Laboratory Scientist Interns in a North Central Tertiary Health Institution in Nigeria, *International Journal of Interdisciplinary Research Methods*, 13 (1), 52-59

Abstract: Implementation of quality management system (QMS) is important for quality practices, error detection and client satisfaction in medical laboratories. In order to achieve this objective, young practitioners coming to service needs the new knowledge to meet standard (ISO 15189). A three days practical posting orientation was done for 250 Intern Medical Laboratory Scientists posted to the Histopathology Laboratory for one-year mandatory internship to create QMS awareness, leadership and good laboratory practice skills. Data were generated using feedback forms. Result showed that 32.9% gained new knowledge, 18.2% got new insight, 9.2% experience professional self-awareness, 12.1% had better QMS awareness, 7.3% gained motivation and inspiration, 8.5% gained new leadership knowledge, 8.5% satisfactory comment and 2.4% recommended that the exercise should be sustained. Memorable implemented QMS components were process control (35%), organisation (32%), documents and records (32%), personnel (28%), customer service (21%), occurrence management (13%), logistics and inventory (13%), facility and safety (12%), equipment (11%), process improvement (10%), information management (8%), and audit/assessment (5%). It was concluded that QMS awareness was achieved, professional self-awareness boosted and good laboratory practice skills acquired. Orientation for young professionals was recommended in medical laboratories.

Keywords: orientation, internship, QMS, histopathology laboratory

INTRODUCTION

Medical laboratories in health institutions are a critical component of an effective and efficient healthcare system that provides about 60-70% of clinical data required for clinical decision-making process and most often, about 80% of patients who visits healthcare facility will require laboratory test (Adaran *et al.*, 2024; Onyeaghala *et al.*, 2025). Medical Laboratory testing then becomes a critical activity that must generate error –free, accurate, dependable, specific and precise data for disease

Publication of the European Centre for Research Training and Development -UK
prevention, treatment, and monitoring (Onyeaghala *et al.*, 2025). Errors in laboratory results therefore constitutes financial, emotional and economic burden on patients which must be reduced or eliminated. About 60-70% of these errors are pre-analytical (Adaran *et al.*, 2024). Implementing quality management system (QMS) aims at detecting, eliminating such errors, and improving quality of laboratory testing results (Onyeaghala *et al.* 2025).

In our tertiary institution laboratory, efforts were made recently to create quality management system awareness among young practitioners, improving diagnostic skills according to requirements of global standard ISO15189. Quality management system (QMS) is the coordination of all activities in the laboratory along the path of workflow towards achieving quality outcomes at all times. In order to achieve this end, ISO15189 code recommends twelve essential components that must be implemented by medical laboratories (Onyeaghala *et al.* 2025). These are organisation, personnel, equipment, logistic supply and inventory, process control, process improvement, information management, audit/assessment, occurrence management, documents and records, facility and safety and customer service.

When quality management system is not implemented in the laboratory, errors remain unidentified, quality result is compromised, patients are injured, and management of conditions is complicated, medico-legal cases ensue, training programs lose accreditation and institutions get poor image and loss of opportunity for grants that may bring changes.

There is high level of ignorance in young professionals who report for the first time to a new work environment on the organisational culture, tradition, practices and ethical expectations (Cervantes *et al.*, 2025). Organizing orientation and dishing out organized knowledge will bridge this gap. The literature is replete with knowledge about internship and orientation practices in developed countries. However, there is an information gap about such activity and the outcome in developing countries especially in Nigeria as it affects Medical Laboratory Scientist Interns. This paper therefore attempts to enrich the literature with information about orientation practice for young Medical Laboratory Scientists and the outcome of the exercise in our institution. This may serve as a foundational study for future research on long term impact of the exercise in the career of participants.

LITERATURE REVIEW

It has been reported that interns work aimlessly and oblivious of what is expected of them hence the need for orientation. This lack of knowledge and practical skills in a new work environment calls for guided instructions to fill knowledge and skill gaps in order to reduce the chances of errors (McKenzi and Mellis, 2018).

Orientation program for young professionals is always an opportunity to canvass fresh ideas, impart system knowledge, organize teams for top performance and implement policies that promote good laboratory practice. It has been identified as a vital tool for productivity, learning and improved performance (Purworusmiardi *et al.*, 2021).

Internship is a practical training that exposes participants to a process of apprenticeship in established organizational settings especially in medicine and engineering professions in various countries such as Italy, United Kingdom, France, and Spain (Acheampomaa, 2019). It doesn't only provide opportunities for gaining real life work experience in the field under the supervision of mentors; it is actually a privileged position to express autonomy, responsibility and accountability to combine both

Publication of the European Centre for Research Training and Development -UK theory and practical in real life scenarios (ASLM, 2026). The programs are often tailored to meet organizational or professional goals. For example, the twelve month internship program of the African Society of Laboratory Medicine (ASLM) as stated on its website is to ‘provide interns with hands-on experience and enhance their skill set in laboratory systems, diagnostics and project management and the opportunity to interact with professionals, researchers, policy makers, fostering collaborative environment that contributes to their professional development’(ASLM, 2026).

In the Medical profession, internship has been adjudged a delicate and essential phase for transforming into a complete doctor. It is a period where a fresh graduate technically learns various disciplines or departments to undergo a one-year rigorous houseman ship where they participate in patient management (McKenzie and Mellis, 2018). The same scenario plays out for fresh Medical Laboratory Science graduates who must be giving for exposure to diagnostic skills to become a complete Medical Laboratory Scientist (Cervantes *et al.*, 2025).

METHODOLOGY

A three days’ practical posting pre-training orientation was organized for a total of 250 Intern Medical Laboratory Scientists posted in batches to the Histopathology Laboratory for their one-year mandatory internship program over a period of ten years. Two hundred and fifty (250) filled feedback forms for orientation participants were compiled. 82 completely filled forms were randomly selected, cleaned and analysed based on thematic areas of volunteer comments freely documented by participants after the orientation and practical posting respectively. Focused group discussion was also done on client identification, client psychology, feedback and client- centred practices. Microsoft Excel was used to analyse the data generated. Data was presented in tables and charts to determine knowledge attained and most memorable QMS essential implemented.

RESULTS

Table 1: Numbers of participants and feedback on orientation thematic areas

S/N	Outcome	Frequency	Percentage Frequency
1	Knowledge gained and educative	27	32.9%
2	Insightful and eye-opening	15	18.2%
3	Professional self- awareness and understanding	8	9.7%
4	QMS better awareness	10	12.1%
5	Motivating and inspiring	6	7.3%
6	Leadership knowledge gained	7	8.5%
7	General satisfaction	7	8.5%
8	Recommendation for continuity	2	2.4%

Table 2: Percentage frequency of QMS essentials implemented

S/N	Essential QMS Component	Frequency	%Frequency
1	Organisation	26	32
2	Personnel	23	28
3	Equipment	9	11
4	Logistics supply and inventory	11	13
5	Process control	29	35
6	Process improvement	8	10
7	Documents and record	26	32
8	Information management	6	8
9	Incident/occurrence management	10	13
10	Audit and assessment	4	5
11	Facility and safety	10	12
12	Customer service	17	21

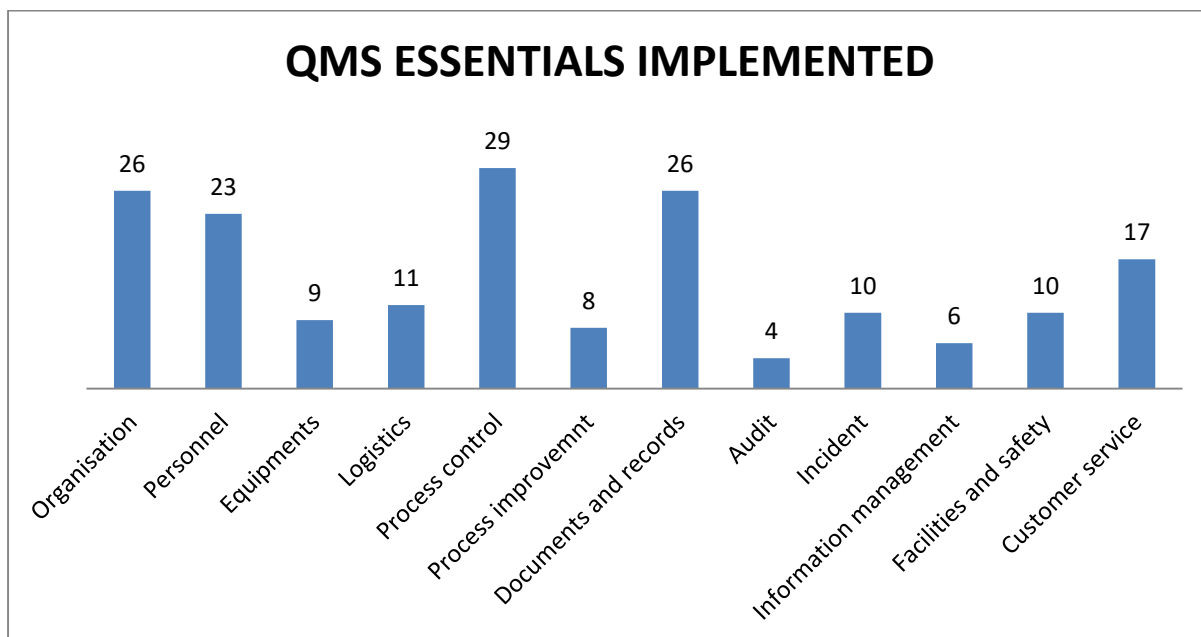


Figure 1: Bar chart showing QMS essentials implementation by Intern MLS

Percentage Frequency of Top 5 QMS Essentials

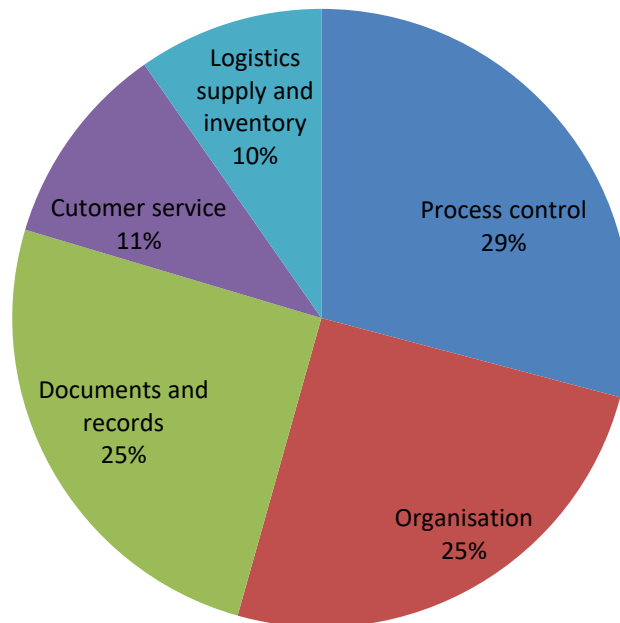


Figure 2: Pie chart showing percentage frequency of top 5 QMS essentials implemented by I Medical Laboratory Scientists

DISCUSSION

Orientation is both an information gap bridging process and skill building one. After making the young professionals to undergo the process, evidence is required to understand the type and form of outcome on participants. This research has extracted direct outcome of the process in our institution from the participants. Motivation is an energy that supports great ideas as it moves the individual to convince himself of why he should carry out an activity. It often leads to productivity and good performance. It's also an important emotional state that provokes individuals towards learning and achievement (Huda and Mahdi, 2022).

Orientation has been documented to support learning and learning outcomes (ZWieg *et al.*, 2021). These authors observed a positive learning outcome for orientation participants. This is in agreement with our study (See table 1) where 32.9 participants submitted that they gained knowledge and understanding on subject matter taught, 9.2% attested that they gained strong knowledge about their profession which increased their professional self awareness while 18.2% gave feedback that their

learning experience was eye opening. While in our own study, outcome of the orientation exercise was the objective, Zwieg and colleagues (2021) dwelt on the impact of orientation on participants.

One result from our study was the report of better understanding of what quality management system (QMS) is and its ramifications. More than twelve percent (12.1%) of participants documented that they had better awareness of quality management system. This outcome was encouraging as it met one of the objectives of the orientation activity. This is value addition in knowledge and agrees with the findings of Gremyr and colleagues (2021) who reported that QMS not only contribute to operational performance, quality of service and organisational structure but also create critical potential for value addition.

Coming to the essential component they are most aware about, process control topped the list with twenty-nine percent (29%). Components of process control include use of standard operating procedures, quality control, sample handling, results validation, temperature control/charts and internal audit. These naturally impact knowledge and skills on laboratory testing framework for planning, performance, monitoring, and recording, reporting and archiving (Alatgi and Chougule, 2015).

The second and third essential component participants are mostly aware about is organisation plus documents and records. It is heart-warming that participants recorded organisation component as one of their memorable take away. In the training, the concept of organisational mission, vision and culture was emphasised and well explained. In human resource management, increase in performance is a critical objective. Organisational culture derived from its vision and mission has impact on employee's attitude and choice in terms of maximizing opportunities and challenges. For example, the culture of an organization makes it unique in services, innovation, change management, risk aversion, consistency and quality of daily decisions (Olanipekun and Oderinde, 2022). The University of Ilorin Teaching Hospital's vision is to 'transform University of Ilorin Teaching Hospital into the hub of quality and standard healthcare delivery in Africa' while its mission is to 'provide quality and standard healthcare delivery that is second to none in Africa and to become one of the global healthcare service institution' (www.uithilorin.org.ng). Understanding organizational mission and vision is key to successful implementation of quality management system in the medical laboratory.

The inclusion of documents and records as top on the list of what participants perceived as memorable is an indication of good outcome for the orientation exercise. Documents referred to for use in the histopathology laboratory during the orientation include histopathology laboratory policy, quality manual, standard operational procedures, safety manual among others. Records mentioned were all the evidences of daily activities in the archive such as day registers, pathology report files, diagnosis register, process registers, slide screening, verification and validation records; internal audit and compliance records among many others. Participants understood that 'What is not documented is not done'. According to the Strengthening Laboratory Management Towards Accreditation (SLMTA) document, 'documents provide the policies and procedures to guide the work of the laboratory' while 'records provide the evidence that this work is accomplished'.

The fourth essential component among the top five well as reported by participants is customer service. Customer service aims at client satisfaction about services rendered by the laboratory and it is one of the 12 essential components of quality management system in line with ISO 15189 (Etukudo and Uchejeso, 2020). It is very impressive that participants at the orientation understood this concept and had it etched in their minds. The training emphasised on customers' identification, customers'

Publication of the European Centre for Research Training and Development -UK
psychoanalysis, customers' feedback, addressing customers' complaints and taking surveys to provide information for improvement. Participants' listing it as one of the top memorable components is a good outcome for the orientation exercise.

The fifth of the top five essential components of quality management system recorded as memorable by participants is logistics and supply chain management for medical laboratories. It was emphasised at the training that this component has the objective to prevent interruption of services in the medical laboratory. Supply of reagents and consumables commonly referred to as commodity for testing in the medical laboratory is essential for efficiency and increase in services. In Nigeria and Africa, development of this essential component is still at its infancy as it is poorly coordinated leading to poor quality healthcare. This component is the part responsible for engaging and partnering with manufacturers, suppliers, vendors, and customers within and outside an organisation to ensure timely sourcing and delivery of reagents and consumables needed for testing in medical laboratories (Kalu and Chukwura, 2022). This must be strategically managed through right sourcing, acquisition, transport and storage to fulfil orders, promote cost effectiveness and run profitable budget. The security of medical laboratory commodity must be ensured to provide quality services and drive competence required for customer satisfaction as an essential component of quality management system. The authors are glad that participants understood this concept and recorded it as one of high awareness for them.

IMPLICATION TO RESEARCH AND PRACTICE

Aside providing baseline information on the outcome of orientation exercise for Intern Medical Laboratory Scientists, this report is an impetus for further research on impact of such exercise in services provided and quality metrics. Information and data so generated can trigger improved processes for high productivity, quality services, capacity development, patient safety and client satisfaction.

CONCLUSION

The orientation exercise achieved motivation to learn new knowledge, imparted participants with quality management awareness, higher professional self-awareness and memorable consciousness of process control, organisation, documents and records, logistics supply and inventory management and customer service.

FUTURE RESEARCH

The authors would be generating fresh research questions to interrogate the impact of orientation on productivity, performance and quality metrics.

REFERENCES

- Acheampomaa, C. (2019) Internship, International Journal of Interdisciplinary Research Methods, 6(4) 16-27.
- Adaran, T. Jenrola, O. Jegede, F. Ojo, O. Bakare, A. Omiyale, O. Sanni, O. Aliu, O. And Owolabi, B. (2024) *Quality Management Systems Implementation in Public Medical Laboratories; A sustainable approach to health system strengthening in Lagos State, Nigeria*, PloS One, 6 1-13.

Publication of the European Centre for Research Training and Development -UK

- African Society of Laboratory Medicine (2026). *ASLM Internship Program*, News article. Accessed 15TH June, 2026. <https://aslm.org/academy/news-article/aslm-internship-program/>
- Alatgi, A. and Chougule, S. (2015) *Good Laboratory Practice*. Journal of Evolution of Medical and Dental Sciences, 4(103) 16902-16906.
- Cervantes, M. Layman, C. Macadaeg, C. Morales, M. Quiaoit, J. Sal vatierra, J. and Stevens, V. (2025) *The Knowledge Attitudes And Practices Towards Laboratory Practices Among Medical Laboratory Science Interns*, Loarma Colleges-Center for Health Sciences, 1-17.
- Etukudoh, N. and Uchejeso, M. (2020) *Patient's (Clients) Satisfaction With Medical Laboratory Services Contributes To Health And Quality Improvement*, IntechOpen, (99290) 1-16.
- Gremyr, I. Lenning, J. Elg, M. and Martin, J. (2021) *Increasing the Value of Quality Management Systems*. International Journal of Quality and Service Sciences, 1-14.
- Huda, A. and Mahdi, Q. (2022) *Motivational orientation and its relationship to academic achievement among students of the Department of History at the University of Diyala*, Journal for educators and teachers and trainers, 13(4) 344-354.
- Kalu, O. and Chukwura, E. (2022) *Medical Laboratory Supply Chain Management Reviews; Implications In Achieving a Standard Diagnostic Outcome*, International Journal of Advances in Engineering and Management, 4(8) 1002-1011.
- University of Ilorin Teaching Hospital (2026) *Vision and Mission statement*. www.uithilorin.gov.ng
- McKenzie, S. And Mellis, C. (2018) *The impact on internship of a tailored intern preparation package*, Advances in Medical Education and Practice, 9, 639–648.
- Olanipekun, L. and Oderinde, M. (2024) *Leadership Orientation, Organisational Values and Organisational Policies as Predictors of Organisational Culture on Resolution of Dispute in Selected Nigerian Tertiary Institutions*. Economic Insights-Trends and Challenges, 13(3) 119-134.
- Onyeaghala, A.A., Oyedele, O.B., Adebisi, N.A. & Musango, A.D. (2025) *Preanalytical Factors Affecting Medical Laboratory Operations: A Look at Laboratory Request Forms in a Selected Tertiary Health-Care Facility in Ibadan*, International Archives of Health Research, 4(1) 1-9.
- Purworusmiardi, T. Laksono, H. Damayanti, E. and Roysid, A. (2021) *Employee orientation, Training, and Development of Employee Performance at University in Surabaya*, International Journal of Entrepreneurship and Business Development, 4(6) 839-844.
- SLMTA (2026). *Strengthening Laboratory Management Towards Accreditation: Module 10. Documents and Records*, Available from <https://slmta.org/resources/training/ppt-file/module-10.pdf>
- Zwieg, J. Hanita, M. Stafford, E. and Khanani, N. (2021). *Impact of an Orientation on Online Students' Course Outcomes*, Journal of Research on Technology in Education, 21 1-54.