

# Improving Competency for Safe Clinical Diagnostic Practice: Assessment of Continuing Professional Development of Physicians in Public Secondary Hospitals, Southwest, Nigeria

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## Abstract

Clinical diagnosis is a major and important task performed by physicians in hospitals, and it forms the basis for determining appropriate treatment of a patient. As such, deficiency in clinical competencies of physicians can result in mistakes and cause harm to patients in hospitals. The effect of continuing professional development on safety clinical diagnostic practices remains understudied in Nigeria. The study adopted a survey research design and a self-developed questionnaire was used to collect quantitative data from 107 physicians in 10 hospitals. Findings reveal that physicians engage more in informal continuing professional development (CPD) such as seminars, conferences and short courses than formal CPD such as research, paper publication, journal peer review, residency training. Further results show a r-value of 0.141, reflecting a positive but weak relationship between continuing professional development and safe clinical diagnostic practice at a 5% level of significance. The r-square value of 0.020 indicates that only 2.0% of the variability in clinical safety practice can be explained by (informal and formal CPD) continuing professional development. The study concluded that engagement in CPD can improve safety clinical diagnostic practice. High workload, low motivation, poor finance wear barriers to CPD engagements of physicians. It was recommended that Medical Professional Association should improve the metrics of evaluating the relevance of CPD to current developments in clinical practice. The government should improve on monitoring compliance with clinical diagnostic safety guidelines and provide adequate funding in support of health workers' training guidelines in public hospitals.

### Keywords:

Clinical competency,  
Safe clinical  
diagnosis, Patient  
safety, CPD,  
Continuing  
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development

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## **Background to the Study**

The competency of physicians in clinical diagnosis is a critical marker in determining quality of patient care. Clinical competence is defined as “having the knowledge and skills for safe and effective practice” (Nursing and Midwifery Council, 2008). Patients rely greatly on their physicians, trusting them with their lives and expecting competent care all the time. Continuing professional development is a systematic process of improving the professional proficiency of physicians throughout their working lives. Undoubtedly, physician's ability to effectively and safely care for divergent health needs of patients requires constant knowledge and skill updates. Physicians need updated their knowledge and skills to appropriately and adequately diagnose and treat patients. The quality and safety of clinical care in public hospitals, especially in resource-poor, highly populated developing countries such as Nigeria, is often reported as poor or unsatisfactory. In the public hospital especially, clinical service appeared to be 'volume-based' than 'value-based' service in due to limited physicians caring for an overwhelming number of patients resulting from overbooked clinics. Efficient and safe clinical service entails that physicians work motivated work environment, engage in regular training and make evidence-based informed decisions and carry procedures based on modern diagnostic techniques.

Continuing professional development (CPD) ensures the integration of contemporary knowledge and skills into clinical practice. Medical knowledge is transient and may become irrelevant within ten years of practice (Langins & Borgermans, 2015). Constant engagement in continuing professional development keeps physicians learning and current with professional developments in their fields of practice and specialization. Engaging in CPD helps a physician to remain knowledgeable, experienced, confident, and improve the ability to demonstrate clinical practice based on best available evidence to provide the highest standard of care either as an individual physician or as a professional team member. Physicians must be aptly committed to updating their knowledge and obtaining newer skills for sound clinical practice (Nsemo, Nkere, & Enebelib, 2019). It is the responsibility of physicians to improve their competence for clinical practice through self-assessed, self-determined, and self-directed CPD engagement. It is argued that without continuous learning, physicians will experience a decline in knowledge and skills, experience low morale, and become disillusion in medical practice (Domen, 2016). Gaps in the knowledge and skills of a physician will negatively impact the quality and safety of patient care. Continuing professional development consists of wide-range trainings capable of enhancing professionalism and problem-solving skills of physicians.

Continue professional development can be acquired through self-learning efforts, professional group-based learning, or a mentor and mentee relationship. It could be face-to-face, classroom-based or online learning methods. Physicians need to attend conferences, meetings and engage in research, academic paper writing, and review of peer articles. Physicians should take responsibilities to identify personal knowledge gap, develop their learning objectives, expected outcomes and CDP activities that can meet their expectations. Physician's knowledge or learning gap can be identified through self-

assessment or appraisal clinical practice. Professional medical associations should to improve on the metrics of evaluating the relevance of CPD to current developments in clinical practice essentially for quality and safe patient care. This is essential to ensure its relative importance to improving in clinical practice and patient health outcomes (Filipe, Mack & Golnik, 2017). Physicians should engage in CPD activities with clearly structured learning agenda and measurable outcomes that are aligned with their personal pre-determined CPD goal. Improving clinical competencies involves enhancing physicians' medical-technical skills and other soft skills such as communication, collaboration and team play attributes (Langins & Borgermans, 2015).

### **Statement of the Problem**

Healthcare in Nigeria is reportedly prone to many problems and challenges that contribute to the harm and deaths of patients that should have been avoided in hospitals. According to the World Health Organization (2017), the major challenges in patient safety in the Nigerian health system may be linked to inadequate training of caregivers, and poor evidence-based medical practice. Several reports documented evidence on harmful experiences endured by patients in especially public hospitals in Nigeria. Unsafe practices such as needle recapping, wrong infusion, wrong medication predisposes patients to drug allergies, poisoning and other complications (Abubakar, Usman, Idris, Muhammad, Haddad & Mba, 2019). Poor hospital infection control and poor hand washing expose patients to hospital-acquired pathogenic agents and infections such as tuberculosis, pneumonia, wound or surgical site infections. Diseases such as cancer, kidney and heart problems are sometimes incompetently diagnosed or treated, and thereby causing prolonged illness, trauma or untimely deaths of patients (Oviasu, Rigby, & Ballas, 2015). Poor surgical procedures may expose patients to septic wounds, irreversible organ damage, and painful deaths. The relevance of continuing professional development in improving competency of physicians' clinical competency for safe remains unclear in public health settings in Nigeria. This study therefore aims to safe clinical practice and engagement of physicians in CPD in public secondary hospitals in Southwest, Nigeria.

### **Objectives of the Study**

The broad objective of this study was to investigate the influence of continue professional development (CPD) on safe clinical diagnostic practice in public secondary hospitals in Southwest, Nigeria.

The specific objectives were:

1. To examine frequency of physicians' engagement in CPD activities in public secondary hospitals Southwest, Nigeria;
2. To examine safety of clinical diagnostic practice in public secondary hospitals in Southwest, Nigeria;
3. To determine barriers to physicians' engagement in CPD activities in public secondary hospitals Southwest, Nigeria.

The outcome of this research work will inform planning and implementations of reforms that will improve the uptake of CPD programs among healthcare professionals and also ensure CPD impact on clinical competency for quality and safe health service delivery.

### **Research Questions**

1. What is the frequency of physicians' engagement in CPD in public secondary hospitals in South-West, Nigeria?
2. What are the safe clinical practices in public secondary hospitals in South-West, Nigeria?
3. What are the barriers to physicians' engagement in CPD in public secondary hospitals in South-West, Nigeria?

### **Hypothesis of the Study**

H<sub>0</sub>: There is no significant relationship between physicians' engagement in CPD activities and safe clinical practice in public secondary hospitals in in South-West, Nigeria?

### **Literature Review**

#### **Competency Clinical Practice**

Clinical competency entails the demonstration of a mixed grill of skills, knowledge, attitudes and abilities to perform medical duties optimally to ensure safety and quality required in specific patient health needs. According to Lloyd, and Templeton (1982), a competent doctor should have the knowledge, skill, and experience to diagnose correctly and provide appropriate treatment interventions. White (1959) submitted that clinical competence manifests itself in observed behaviors or practice of a healthcare practitioner. American Board of Internal Medicine (1979), identified four dimensions of clinical competence to include; (1) problem-solving abilities (i.e., knowledge, technical skills, and interpersonal skills), (2) problem-solving skills (i.e., data gathering and diagnoses), (3) ability to understand the nature of medical illness, and (4) understanding the social and psychological aspects of the patient's medical diagnosis and management.

Schmidt and Boshuizen (1992) reasoned that clinical competence is achieved through integration of knowledge acquired during medical school and post medical school training experience and training acquired all through the medical career life of the physician. Professional core competencies to be maintained by physicians include the ability to demonstrate and apply knowledge of biomedical, clinical, and cognate sciences to patient care; provide compassionate, appropriate, and effective patient care; investigate, evaluate, appraise and assimilate processes scientifically; provide cost-conscious, effective and safe patient care; work to promote patient safety; coordinate care with other health care providers; maintain commitment to ethical principles; demonstrate interpersonal & communication skills and use of informatics (Combes & Arespacochaga, 2012).

### **Safe Clinical Practice**

Safe clinical practice is conceptualized as the avoidance or prevention of injury or deaths of patients during medical care in hospitals (Rodziewicz & Hipskind, 2019). The earliest theorists of patient safety associated healthcare service with having the complexities and propensities for unpredictable safety challenges. An important factor considered as responsible for likely complications and safety problems in medical care is continuing professional development challenges. Low CPD of physicians may result in unsafe clinical practice that could lead to a wrong diagnosis or incompetent diagnoses and treatment, prescription of substandard, counterfeit or proscribed drugs, or unguided prescription of lethargic drugs. It could also result in faulty surgical procedures, mismanagement of infusions, and exposure of the patient to hospital-acquired infections (Institute of Health, 2010). Bari, Khan, and Rathore (2016) observed that patients may suffer pain, injuries, physical damage, and loss of body parts or death due to mistakes made by physicians that could have been avoided. Invasive procedures such as blood transfusions, endoscopies, and injections are serious causes of significant harm to patients when they are incompetently managed. Ajemigbitse, Omole, Ezike and Erhun (2014) identified low morale, knowledge and skill gaps, lack of teamwork and workload as some of the reasons responsible for medication errors in a south-west tertiary hospital in Nigeria.

Ojerinde, Olabisi and Adejumo (2014) reported that inadequate knowledge about the drug and prescription guidelines contributes to prescription and drug safety mistakes in hospitals. Chukuezi and Nwosu (2010) identified errors in clinical judgment as a major reason for surgical errors in hospitals in Nigeria. Mekonnen, Alhawassi, McLachlan and Brien (2018) reported inadequate knowledge and training as major problems responsible for medication errors in a systematic review study of medication errors in some African hospitals. Okafor and Okoro (2013) submitted that lack of training and retraining of healthcare personnel in public hospitals may compromise quality improvement and patient safety.

The World Health Organization (2013) estimated that about 5% of HIV, 40% of Hepatitis C and 32% of Hepatitis B virus infections are caused by infections acquired from unsafe injections administered annually in developing countries. Enwere and Diwe (2014) noted that poor knowledge in managing post-exposure prophylaxis and poor management of a needle-prick and other hospital accidents culminates in risks of HBV, HCV and HIV transmissions. Hence, physicians need adequate knowledge and skills to handle their job roles successfully by engaging in continuing professional development to reduce quackery and improve safe clinical practice.

### **Developing Clinical Competence through CPD**

Thomas (2012) noted that continued professional development is essential for improving professional learning, competence, and invariably providing standard patient care. CPD provides physicians with practical knowledge of emerging developments in healthcare practice and methods (Agyepong, 2018). Altranais (1994) opined that continuing

professional development should be planned and targeted at enhancing the knowledge, skills and attitudes of physicians for quality patient care. According to Nsemo, Nkere, and Enebelib (2019), CDP programs should be purpose driven, patient-centred, and directed towards fulfilling the learning needs of physicians. Agyepong (2018) argued that continuing education is a womb-to-tomb professional development process that should span throughout the career life of the physicians. Cervero and Gaines (2014) in a study conducted on effectiveness of CPD, affirms the relationship between participation of physicians in continuing professional development and patient health outcomes.

Continuing professional development exposes physicians to new ideas, novel diagnostic methods, practical problem-solving skills, and professional mindset and behavior. Continuing professional development is an important method of expanding knowledge, skill, and competence of physicians (Iliffe, 2011). In planning for CPD, it is important for the physician to evaluate his current clinical performance, identify personal knowledge gap and plan to engage in CPD activities that are most effective in improving clinical practice that will yield positive patient health outcomes. Continuing professional development activities must be outcomes-based and structured to enhance good clinical practice and positive patient outcomes (Wallace & May, 2016). Highly impacting CPD activities are interactive workshops and learning sessions with feedback mechanisms.

### **Materials and Methods**

A hospital-based survey research design study conducted across 10 public secondary hospitals in South West, Nigeria. Convenient sampling was used to enroll 107 physicians met on duty at different clinics in the general outpatient departments (GOPD) (obstetrics and gynaecology, oncology, internal medicine, ophthalmology and HIV/ AIDS clinics) of the hospitals sampled. The research instrument was a self-developed questionnaire with thirty items divided into four sections. Section A: Socio-demographic consisting of 4 items ranging from age, sex, marital status and educational background. Section B: Safe Clinical Diagnostic Practice with 12 items Section C: Engagement of Physicians in CPD consists of 12 items and Section D: Barriers to CPD engagement consisting of 6 items. The questionnaire was validated using face and content validity and was pilot-tested using 30 physicians in a public secondary hospital excluded from the study sites of this study. The questionnaire consisted of structured quantitative closed-ended questions designed to elicit precise, reliable, and statistically useful answers from respondents. Cronbach's alpha reliability coefficients for the constructs ranged from 0.82 to 0.89, indicating an acceptable level of internal consistency of the questionnaire. The questionnaire was de-identified and bears no other form of linkages to the respondents. The questionnaire distributed had a response rate of 92%. Participation in the study was voluntary and informed consent was obtained before the questionnaire was administered. A response rate of 98.6% was achieved among physicians. Data were analyzed using descriptive and inferential statistics.

### **Data Analysis Procedure and Ethical Consideration**

The data collected were analyzed using SPSS 20. Descriptive statistics in frequencies, percentages, means and standard deviations and regression to present the results of the

analysis. A p value of <0.05 was considered statistically significant. Ethical approval was obtained from the Babcock University Health Research Ethics and State Health Service Commission.

## Results

**Table 1:** Showing percentage and frequency distribution of socio-demographic characteristics physicians

<b>Variables</b>	<b>Physicians Frequency (%)</b>	<b>n = 107</b>
<b>Age</b>		
18-34yrs	22 (20.6)	
36-45yrs	73 (68.2)	
46-55yrs	10 (9.3)	
>55yrs	2 (1.9)	
<b>Gender</b>		
Male	60 (56.1)	
Female	47 (43.9)	
<b>Highest Educational qualification</b>		
MBBS	97 (90.7)	
MSc	-	
PhD	-	
Fellowship	10 (9.3)	
<b>Years of Practice</b>		
1-5yrs	21 (19.6)	
6-10yrs	26 (24.3)	
11-15yrs	36 (33.6)	
16-20yrs	19(17.8)	
>20yrs	5 (4.7)	

The majority of all the physicians falls within the age group of 36-45years. Male physicians are 56.1% and female are 43.9%. Most of the physicians, 91.7% had only basic first degree qualification of MBBS, and 9.3% had fellowship degree. Significant percentage 33.6 of the physicians have practiced for between 11-15 years.

**Research Question 1:** What are the safe clinical diagnostic practices in public secondary hospitals in South-west Nigeria?

**Table 2:** Safe clinical diagnostic practice among physicians

Variable (n=107)	Always Frequency (%)	Sometimes Frequency (%)	Occasionally Frequency (%)	Rarely Frequency (%)	Mean	SD
I make use of standard clinical diagnostic checklist (Online or Offline)	32 (29.9)	26 (24.3)	31 (29.0)	18 (16.8)	2.67	1.080
I elicit and document sufficient information on patient based in conformity with (SOAP: subjective, objective, assessment Plan) in the patient diagnosis	42 (39.3)	50 (46.7)	15 (14.0)	(-)	3.25	.688
I conduct physical examination for non-verbal signs of distress	57 (53.3)	40 (37.4)	5 (4.7)	5 (4.7)	3.39	.786
I make tentative diagnosis and request for detailed laboratory investigations for clarifications	49 (45.8)	51 (47.7)	7 (6.5)	(-)	3.39	.611
I confer with senior physician in determining appropriate diagnosis and treatment when in doubt	68 (63.6)	30 (28.0)	6 (5.6)	1 (.9)	3.57	.648
I refer patient for invasive diagnostic test only when there is no alternative option	36 (33.6)	25 (23.4)	39 (36.4)	7 (6.5)	2.84	.973
I obtain sound professional interpretation of laboratory diagnostic results	44 (41.1)	49 (45.8)	14 (13.1)	(-)	3.28	.684
I re-validate ambiguously high risk diagnostic results to avoid wrong diagnosis	48 (44.9)	38 (35.5)	19 (17.8)	2 (1.9)	3.23	.808
I treat patients combining clinical and diagnostic assessment	52 (48.6)	44 (41.1)	11 (10.3)	-	3.28	.909
I use up-to-dated versions of medication prescription guidelines for drug prescription	44 (41.1)	53 (49.5)	8 (7.5)	2 (1.9)	3.30	.690
I discuss and review treatment plan for chronic and life threatening illness with senior colleague	45 (42.1)	37 (34.6)	25 (23.4)	(-)	3.19	.791
I schedule regular follow-up review of patients with chronic illness	63 (58.9)	40 (37.4)	4 (3.7)	(-)	3.55	.570
Average weighted mean					3.25	
Average weighted SD						0.77

**Source:** Survey (2019)

Table 2 shows that 29.9% of the physicians always make use of standard clinical diagnostic checklist to guide patient care. Physicians who always elicit and adequately document critical information on patient illness are 39.3%. Physicians who always conduct a physical examination to diagnose non-verbal distress are 53.3%. Physicians with professional ability to always interpret laboratory diagnostic results are 41.1%; and 49.9% always bother to re-validate ambiguously high risk and life threatening diagnostic results to avoid wrong diagnosis. Physicians who always combine clinical and diagnostic assessment to treating patients are 48.6% and those who always schedule chronically illness patients for follow-up review are 58.9%. Only 48.6% of physicians always treat patients based on clinical and diagnostic assessment. 42.1% of the physicians always discuss and review treatment plans of chronically ill and life-threatening illnesses

with senior colleagues. The use of a standard clinical diagnostic checklist had the lowest mean of 2.67, and a standard deviation of 1.080. Overall, clinical diagnostic safety practice among physicians was high, with an average weighted mean of 3.25

**Research Question2:** What is the frequency of engagement in continuing professional development (CPD) activities among physicians in public secondary hospitals South-West, Nigeria?

**Table 3:** Physicians' engagement in continuing professional development (CPD) activities physicians' continuing professional development (CPD).

Variables (n=107)	Often Freq. (%)	Sometimes Freq. (%)	Rarely Freq. (%)	Never Freq. (%)	Mean	SD
<b>Informal CPD</b>						
I participate in in-house-trainings hands-on-practical	46 (43.0)	35 (32.7)	17 (15.9)	9 (8.4)	3.10	.961
I engage in short professional courses	22 (20.6)	54 (50.5)	28 (26.2)	3 (2.8)	2.89	.756
I attend conferences, seminars, workshops, meeting	32 (29.9)	60 (56.1)	15 (14.0)	-	3.16	.646
I give presentations at meetings, conferences, seminars, workshops	16 (15.0)	49 (45.8)	31 (29.0)	11 (10.3)	2.65	.859
I engage in general reading , leaning / gathering of medical knowledge	74 (69.2)	31 (29.0)	2 (1.9)	-	3.67	.510
<b>Average weighted mean</b>					<b>3.09</b>	
<b>Average weighted SD</b>						<b>.746</b>
<b>Formal CPD</b>						
I engage in research and paper publication	8 (7.5)	21 (19.6)	60 (56.1)	18 (16.8)	2.18	.799
I engage in peer review of bio-medical publication	6 (5.6)	19 (17.8)	43 (40.2)	39 (36.4)	1.93	.876
I author / books / reports / manuals	4 (3.7)	10 (9.3)	25 (23.4)	68 (63.6)	1.53	.816
I lecture / teach professional courses	8 (7.5)	21 (19.6)	30 (28.0)	48 (44.9)	1.90	.971
I coach or mentor (such as providing instruction, and guidance) to trainees or students	30 (28.0)	43 (40.2)	25 (23.4)	9 (8.4)	2.88	.918
I conduct professional technical assessment of medical practice	17 (15.9)	21 (19.6)	36 (33.6)	33 (30.8)	2.21	1.053
<b>Average weighted mean</b>					<b>2.11</b>	
<b>Average weighted SD</b>						<b>0.906</b>

Table 3 showed that 43.0% of physicians often engaged in in-house practical hands-on training, 50.5% sometimes engaged in short professional courses, and 56.1% sometimes attend conferences, seminars, workshops and meetings. Significant percent, 56.1% of the physicians rarely engaged in research and paper publication, and 40.2% rarely engaged in peer review of bio-medical publication. A high number, 63.6% never engaged in book authorship, reports or manuals. 44.9% never engaged in lecturing or teaching professional courses. Significant percent 69.2% of the physicians always engage in general reading, leaning or gathering medical knowledge. 40.2% are sometimes involved in coaching or mentoring trainees or students. 33.6% of the physicians rarely engaged in conducting professional technical assessment of medical practice. Overall, physicians sometimes engage in informal CPD with a mean value of 3.09 and averagely engage in formal CPD with a mean value of 2.11.

**Table 4:** Barriers to physicians' engagement in CPD activities

Variables (n=107)	Strongly Agree Freq. (%)			
Workload/time	92 (85.9)	9 (8.5)	4(3.7)	2 (1.9)
Poor motivation by employer	87 (81.3)	11(10.3)	2(1.9)	7(6.5)
Lack of knowledge on CPD	30(28.0)	30(28.0)	21(19.7)	26(24.3)
Distance to training venues	25 (23.4)	22 (20.6)	30(28.0)	30(28.0)
Funding/lack of finance	75(70.1)	26(24.3)	2 (1.9)	4(3.7)
Low staffing issues/ work schedule	31 (29.0)	26(24.3)	26(24.3)	24(22.4)

Table above indicated that barriers to the physician engagement in were workload, 94.4%, low motivation by employer 91.6%, lack of finance 94.4%. Other barriers are poor knowledge of CPD activities 56.0%, and low staffing and work schedule 53.3%.

Hypothesis H<sub>0</sub>: Continuing professional development does not significantly influence safe clinical diagnostic practice in public secondary hospitals in South-West, Nigeria.

**Table 5:** Regression analysis of influence of continuing professional development on safe clinical diagnostic practice

Predictor	Unstandardized Coefficients		Standardized Coefficients		t	R	R <sup>2</sup>	F	P
	B	SE		P					
(Constant)	39.722	.819		.000	48.475	0.141	.011	2.120	0.123
Informal CPD	-.089	.090	-.152	.325	-.986				
Formal CPD	.007	.084	.012	.937	.079				
<b>CLINICAL DIAGNOSTIC SAFTY PRACTICE (Dependent variable)</b>									

Result in Table 5 indicated r-value of 0.141, which shows there is a positive but weak relationship between human capacity building and clinical safety practice at 5% level of significance. The r-square value of 0.020 indicates that only 2.0% of the variability in clinical safety practice can be explained by (informal and formal CPD) human capacity building. Based on the results above: Test statistic (F-value) = 2.120, p-value = 0.123. Level of Significance ( $\alpha$ ) = 0.05. Decision Rule: If  $p < \alpha$  (specified level of significance) reject H<sub>0</sub>, if otherwise fail to reject and conclude accordingly. Conclusion: Since  $p > \alpha$ , i.e. 0.123 > 0.05, then we fail to reject H<sub>0</sub> and conclude that human capacity building has no significant influence on clinical safety practice in public secondary hospitals in Lagos State, Nigeria.

## **Discussion**

Physicians demonstrated competence in safe clinical diagnostic practice. However, a less than an average of the physicians always strictly makes use of diagnostic check checklist, conducting a physical examination for non-verbal signs of distress and competently elicit a useful and adequate patient medical history in accordance the international gold standard (SOAP: subjective, objective and assessment plan) diagnosis. Further findings showed that physicians' competency in interpreting diagnostic results or re-validating high risk diagnostic results is poor. Less than average percent of the physician's display competency in terms of reviewing treatment plans for chronic and life-threatening illnesses. Further results indicated that majority of the physicians have only basic MBBs qualifications. Physicians engage more in informal CPD such as in-house trainings, conferences, workshops, general reading, and hardly engaged in activities such as research, publications, journal peer review. This is similar to Kristensen, Nymann, and Konradsen, (2016) study which reportedly found inadequate conduct of research among clinicians in Demark. Similarly, Ihudiebube-Splendor (2017) reported that physicians often avail themselves of CPD activities when it is freely organized in-house by hospital management. Poor motivation, finance, low staffing, and clinical workload were major factors inhibiting physicians' engagement in CPD.

## **Conclusion**

The study concluded that continuing professional development can improve safety safe clinical diagnosis in public secondary hospitals in Lagos State, Nigeria. It was recommended that State Ministry of Health should improve funding in support of health workers' training. The Ministry should also update and monitor compliance with patient safety guidelines in public hospitals. There should be consistency in monitoring and evaluation of continuing professional development of physicians in public.

## **Recommendations**

1. Physicians need to be motivated to explore and utilize e-learning web-based training platforms for flexible, convenient and less expensive opportunities to engage in CPD.
2. There is a need to strengthen the administrative policy on tracking, verification and appraisal of CPD activities for recertification of practicing license of physicians in public hospitals in Nigeria.
3. There is a need for future research to assess the methods of motivating clinicians to engage in research and other advance professional educational trainings.

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