

## BLOOD COMPONENTS AVAILABILITY FOR THERAPEUTIC USE IN NIGERIAN TERTIARY HEALTH INSTITUTIONS

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### Abstract

**Background and Purpose:** The total testing process is made up of pre-analytical, analytical and post-analytical phases. Most laboratories, accreditation bodies and external quality assurance schemes concentrate on analytical and post-analytical errors. This means, most of the errors in the Preanalytical phase are overlooked. The ISO, in a bid to make it easier to assess this phase, introduced a modifiable quality indicator to monitor laid-down processes in laboratories. This study was therefore designed to assess the pre-analytical phase in a Chemical Pathology laboratory of a teaching hospital in southern Nigeria. **Methods:** ISO quality indicators were modified to suit the standard operations of the Preanalytical phase of the said laboratory. Questionnaires were used to assess the non-conformities of these laid-down processes. Defects per million (DPM) of each indicator was calculated and a sigma value was assigned as the performance level. A sigma value below 3 was seen as unacceptable performance and that between 3 and 4 was seen as an acceptable performance, while above 4 indicated good performance. **Results:** A total of 17 quality indicators were used to assess the pre-analytical phase and 12 (70.6%) had unacceptable performance, while 2 (11.8%) had acceptable performance levels. Only 3(17.6%) of these indicators had good performance levels. **Conclusion and Implications:** The high level of unacceptable performances noticed may be due to ignorance, unwillingness or lack of will to do right by staff. Training, re-training and frequent interphase between clinicians and laboratory physicians be introduced or made more regular where they exist.

**Keywords:** Pre-analytical Indicators, Defect Per Million, Non- Conformities, International Organization for Standardization (ISO)

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## PHEOCHROMOCYTOMA DIAGNOSED AT AUTOPSY IN A PATIENT BEING MANAGED FOR SYSTEMIC HYPERTENSION

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### Abstract

Pheochromocytoma is a rare catecholamine-secreting tumour of chromaffin cells of the adrenal medulla or sympathetic ganglia, occurring in about 0.2 to 0.5% of patients with hypertension. We report a case of a 40-year-old university lecturer who was been managed for hypertension. A postmortem examination was carried out following the family's request after obtaining informed written consent. Rokintansky techniques were applied while dissecting the body and the organs were examined grossly and histologically. A left ovoid-shaped 130g mass (10x5x3.5 cm) was seen attached to the superior pole of the compressed residual left adrenal gland. The cut surface appeared friable-dark-tan with an outer golden rim. It was confirmed histologically to be phaeochromocytoma. The cause of death was a biventricular failure. Surgical hypertension can be effectively treated by surgical resection of the tumour. There is a need to exclude pheochromocytomas in young adults with hypertension unresponsive to medications to reduce morbidity and mortality.

**Keywords:** Surgical hypertension, Pheochromocytomas, Catecholamines, Adrenal gland

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## ASSESSING THE PRE-ANALYTICAL ERRORS IN A CHEMICAL PATHOLOGY LABORATORY IN A TERTIARY HOSPITAL IN NIGERIA

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### Abstract

**Background and Purpose:** The total testing process is made up of pre-analytical, analytical and post analytical phases. Most laboratories, accreditation bodies and external quality assurance schemes concentrate on the analytical and post analytical errors. This means, most of the errors at the Preanalytical phase are overlooked. The ISO, in a bid to making it easier to assessing this phase introduced a modifiable quality indicator to monitor laid down processes in laboratories. This study was therefore designed to assess the pre-analytical phase in a Chemical Pathology laboratory of a teaching hospital in southern Nigeria. **Methods:** ISO quality indicators were modified to suit the standard operations of the Preanalytical phase of the said laboratory. Questionnaires were used to assess non- conformities to these laid- down processes. Defects per million (DPM) of each indicator was calculated and a sigma value assigned as the performance level. A sigma value below 3 was seen as unacceptable performance and that between 3 and 4 was seen as acceptable performance, while above 4 indicated good performance. **Results:** A total of 17 quality indicators were used to assess the pre-analytical phase and 12 (70.6%) had unacceptable performance, while 2 (11.8%) had acceptable performance levels. Only 3(17.6%) of these indicators had good performance levels. **Conclusion and Implications:** The high level of unacceptable performances noticed may be due to ignorance, unwillingness or lack of will to do right by staffs. Training, re-training and frequent interphase between clinician and laboratory physicians be introduced or made more regular where they exist.

**Keywords:** Pre-analytical Indicators, Defect Per Million, Non- Conformities, International Organization for Standardization (ISO)

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## LEIOMYOMA ARISING FROM THE VULVA

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### Abstract

Leiomyoma is a benign smooth muscle tumour. It is common in the uterus but rare in the vulva. This is the first case of vulvar leiomyoma seen in Igbinedion University Teaching Hospital since its establishment in 1999. It is being reported to create awareness for clinicians when considering differentials of vulva growths. Histological differential diagnoses of vulvar leiomyoma include leiomyosarcoma, neurofibroma, dermatofibroma, and lipoleiomyoma. A 32-year-old woman presented with a painless, firm, well circumscribed vulvar mass of three years' duration. Based on its location, appearance, and being fairly common, Bartholin's gland cyst was readily considered as the tentative diagnosis before surgery. The histopathology of the tumour excised at surgery showed leiomyoma. Although the condition is rare, early biopsy of all solid and partially solid vulvar masses is highly recommended to confirm diagnosis and arrest progression of benign lesions into malignancies.

**Keywords:** Vulvar, Leiomyoma, Tumour

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## REFERENCE INTERVAL AND OPTIMAL THRESHOLD VALUES OF HOMEOSTASIS MODEL ASSESSMENT OF INSULIN RESISTANCE (HOMA- IR) IN HEALTHY NORMAL-WEIGHT ADULTS IN A NIGERIAN POPULATION

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### Abstract

**Background and Purpose:** The homeostasis model assessment of insulin resistance (HOMA-IR) is one of the surrogate markers of insulin sensitivity/resistance. Currently, there is a paucity of locally– established reference intervals and optimal threshold values for HOMA-IR in Nigeria. Thus, the aim of this study was to determine the normative values and correlates of HOMA-IR among apparently healthy adults in a Nigerian population. **Methods:** A cross-sectional study was carried out among 210 healthy, normal-weight adults aged 18 to 64 years. Anthropometric, physical, and biochemical measurements were carried out including fasting plasma glucose (FPG) and fasting plasma insulin (FPI) levels. The HOMA-IR was calculated using a mathematical formula. The reference intervals and optimal threshold values for the HOMA-IR were derived using the non-parametric percentile method. **Results:** A total of 210 healthy normal-weight, non-diabetic adults, 110 males (52.4%) and 100 females (47.6%) participated in the study. The 2.5<sup>th</sup> and 9.75<sup>th</sup> reference intervals of the HOMA-IR for total (n=210), male (n = 110), and female (n = 100) study participants were 0.02 – 2.56; 0.02 – 2.54; and 0.24 – 2.58 respectively. The 90<sup>th</sup> percentile optimal threshold value of HOMA-IR values for total (n=210), male (n=110), and female (n=100) participants were 2.18, 2.00 and 2.25 respectively. **Conclusions and Implications:** The HOMA-IR reference interval and the optimal threshold value are 0.02 – 2.56 and 2.2 respectively in the Nigerian adult population. These normative values are similar to those reported and adopted by previous studies. However, further studies with larger sample sizes and geographical spread are required to establish more statistically acceptable and reliable HOMA-IR normative values for the healthy Nigerian adult population.

**Keywords:** Insulin resistance, HOMA-IR, Reference interval, Optimal threshold value, Healthy adults, Nigeria.

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## COMPARISON OF METHODS EXPERIMENT AND VERIFICATION OF SOME PERFORMANCE CHARACTERISTICS OF ACCU-CHEK<sup>®</sup> INSTANT GLUCOSE METER

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### Abstract

**Background and Purpose:** Frequent and accurate blood glucose measurements can delay the onset of diabetic complications. This is made possible by the use of point-of-care glucose meters (POCGM). There is a need to verify the claims made by manufacturers of POCGM. We compared fasting blood glucose results obtained from Accu-Check Instant blood glucose meters with laboratory results as a reference. We also verified some claims made by the manufacturer. **Methods:** This prospective analytical study involved the verification of some characteristics of Accu-Chek Instant POCGM which was introduced into the Nigerian market in early 2021 using different concentrations of glucose calibrators prepared in-house. We also compared blood glucose results obtained from Accu-Chek Instant POCGM and routine laboratory glucose oxidase method as reference using the Bland-Altman plot. Statistical significance was set at  $p < 0.05$ . **Results:** There were 188 fasting blood samples tested for glucose using Accu-Chek Instant POCGM and routine laboratory methods. The difference between the means of glucose values from the two methods was 10.3 mg/dL (12.8%) with Accu-Chek POCGM returning higher results than the routine laboratory method. This difference was not statistically significant using the Bland-Altman plot ( $p = 0.60$ ). The analytical range of the POCGM was determined to be between 20mg/dl to 300 mg/dL. Results indicating 'Hi' on the POCGM are below 600 mg/dL contrary to what was claimed by the manufacturer. **Conclusion and Implications:** There was some level of agreement between the two methods studied. Results obtained at high glycemc states may be more consistent but are lower than central laboratory values.

**Keywords:** Point of Care Testing, Comparison of Method Experiments, Verification Experiment, Accu-Chek Instant Meter.

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## PREVALENCE OF LYMPHOMA AND DISTRIBUTION PATTERN OF LYMPH NODE PATHOLOGIES AMONG ADULT PATIENTS WITH LYMPHADENOPATHY IN ABAKALIKI, NIGERIA

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### Abstract

**Background and Purpose:** Lymphadenopathy is usually due to benign or malignant conditions. It can also be local or systemic in distribution and can involve peripheral or deep-seated lymph nodes. The study aimed at determining the prevalence of lymphoma and the distribution pattern of lymph node pathologies among adult patients who presented with lymphadenopathy. **Methods:** A retrospective study was carried out and records of all cases of lymphadenopathy with the histological diagnosis over a five-year period (January 2017 to December 2021), were extracted from the Departments of Anatomical Pathology and Haematology of Alex Ekwueme Federal University Teaching Hospital, Abakaliki. Data generated were analyzed using SPSS software, version 26. **Results:** One hundred and ninety results were extracted with an age range of 18 to 94 years and a mean age of 41±16 years. They were made up of 75 (39.5%) males and 115 (60.5%) females, with male to female ratio of 1:1.5. Prevalence of lymphoma was 50.0% (95/190). Thirty-five (18.4%) were Hodgkin's lymphoma (HL) while 60 (31.6%) were Non-Hodgkin's lymphoma (NHL). Other pathologies manifested by cases of lymphadenopathy include metastatic tumour deposits 38(20%), reactive lymphoid hyperplasia 29(15.3%), and tuberculous lymphadenitis 18 (9.5%). Others include sinus histiocytosis 4(2.1%), dermatopathic lymphadenitis 5 (2.6%) and Castleman's disease 1 (0.5%). **Conclusion and Implications:** About half of all patients who presented with lymphadenopathy were lymphoma with a high prevalence of 50% and the majority were NHL. Other major causes of lymphadenopathy were metastatic tumour deposits, reactive lymphoid hyperplasia and tuberculous lymphadenitis. Any case of lymphadenopathy should be properly investigated early for effective management.

**Keywords:** Hodgkin's lymphoma, non-Hodgkin lymphoma, Tumour

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## ATTITUDES, PERCEPTIONS, AND DISPOSITION OF DOCTORS IN CROSS RIVER STATE TOWARDS MONKEYPOX AND ITS VACCINE

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### Abstract

**Background and Purpose:** Healthcare professionals, especially, medical doctors need to be prepared both clinically and psychologically to prevent monkeypox from becoming another global pandemic after COVID-19. This study was conducted to assess the attitudes, perceptions and disposition of doctors regarding monkeypox and their readiness to accept the monkeypox vaccine. **Methods:** A cross-sectional online study with multi-item scale questionnaires was used to assess doctors working in Cross River State. Data were collected on Doctors' sociodemographic characteristics, worries and concerns about monkeypox, their attitudes, perceptions of, and their readiness to accept and support the monkeypox vaccine. **Results:** A total of 164 doctors completed the survey. There were ill feelings among 42% of the participants that monkeypox would become another global pandemic; 83% had confident that the world population can control monkeypox. About one-fifth of the participants believed that monkeypox is another public health hoax as observed with COVID-19. It was the viewpoints of 21% of the participants that monkeypox will significantly affect daily activities going forward. More than half of the participants accepted to favourably deliver the smallpox vaccine for the prevention of monkeypox ( $X^2: 4.91; P=0.27$ ). When asked whether the participants would accept receiving the smallpox vaccine for preventing monkeypox, 58% of the participants responded in the affirmative. Female doctors (participants) are less likely to support the monkeypox vaccine compared to male doctors (OR (95CI): 0.44 (0.22-0.88);  $P=0.02$ ) while Physicians are more likely to support the monkeypox vaccine compared to surgeons (OR (95% CI): 2.43 (1.03-5.71);  $P=0.04$ ). Sixteen (16%) per cent of the participants had high-risk perception scores (RPS). **Conclusion and Implication:** More than half of the participants displayed low RPS, and willingness to support the delivery of monkeypox. This is a welcome development as this will engender more commitment from the doctors to tackle the menace of monkeypox.

**Keywords:** Monkeypox, Monkeypox Vaccine, Covid-19, Calabar, Nigeria.

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022



## MULTIDISCIPLINARY APPROACH TO THE MANAGEMENT OF OBSTETRIC DISSEMINATED INTRAVASCULAR COAGULOPATHY IN LOW-INCOME COUNTRY

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### Abstract

**Background and Purpose:** Obstetric disseminated intravascular coagulopathy (DIC) results from underlying maternal and/or foetal complications and causes abnormal bleeding during pregnancy due to the depletion of platelets and clotting factors. The application of a multidisciplinary approach in its management in low-income countries (LIC) is being advocated. The aim is to assess the uptake of a multidisciplinary approach to obstetric DIC management in LIC. **Methods:** A structured pre-tested questionnaire was used to collect data on the views of Nigerian obstetricians in the multidisciplinary approach to DIC management. **Results:** A total of 171 obstetricians responded of which 131 (76.6%) were males and 40 (23.4%) were females. 82 (48.0%) were Consultants while 89 (52.0%) were residents. 63 (36.8%) had practised for 5 to 10 years. Practice in tertiary health facilities was observed in 165 (96.5%) participants. The multidisciplinary approach was most preferred as 162 (94.7%) participants endorsed the invitation of other specialists. 142 (83.0%) supported the invitation of haematologists always in the management while 41(24.0%) accepted internist participation. However, 38 (22.2%) recommended that surgeons should be rarely invited. About 115 (67.3%) participants recommended that the involvement of specialists in treatment should be when the clinical presentation was suggestive of DIC. No significant association existed between years of practice and invitation of other specialists ( $X^2 = 9.590$ ,  $p = 0.252$ ). Co-management of Obstetric DIC with Haematologists was the most prevalent response with a frequency of 165 (97.6%) while Obstetricians singly managing the cases had the least frequency of 14 (8.3%). **Conclusion and Implications:** Obstetric DIC management by its nature is very challenging, but the multidisciplinary approach remains the gold standard.

**Keywords:** Obstetrics, disseminated intravascular coagulopathy, perinatal, Haematologist.

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## KNOWLEDGE ABOUT HUMAN MONKEYPOX AND CONFIDENCE OF MEDICAL DOCTORS AT SPOT DIAGNOSING MONKEYPOX: A CROSS-SECTIONAL STUDY IN CALABAR, NIGERIA

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### Abstract

**Background and Purpose:** Human monkeypox is an emerging viral zoonotic infectious disease caused by an enveloped double-stranded DNA virus that belongs to the *Orthopoxvirus* genus, of the *Poxviridae*. From the 1<sup>st</sup> of January to the 31<sup>st</sup> of October, a total of 77, 264 laboratory-confirmed cases from 109 Countries have been reported including 36 deaths by the World Health Organisation. Knowledge of monkeypox, high index and sound clinical judgement particularly amongst medical doctors are critical to responding to monkeypox effectively. Previous studies have shown poor knowledge of monkeypox infection among doctors. This study aims to assess doctors' knowledge of monkeypox and their confidence in diagnosing monkeypox prior to laboratory confirmation. **Method:** A cross-sectional online survey containing a 28-item scale and explanatory variables was used to assess respondents' knowledge, confidence and risk perception of monkeypox. The participants were reached with an online Google form posted on the Nigerian Medical Association group WhatsApp, Cross River State. The questionnaires were structured as closed-ended and were self-administered to collect quantitative data. **Results:** A total of 164 medical doctors working in Cross River State participated. Only 38 (23.2%) of them had good knowledge of monkeypox, using a > 60% cutoff point for good knowledge. Seventy-two per cent (72%) displayed confidence in clinically diagnosing monkeypox in their daily clinic runs. There was a statistically significant relationship between the knowledge category and medical sub-specialities ( $X^2 = 6.98$ ;  $p = 0.03$ ). **Conclusions and Implications:** We conclude that knowledge of monkeypox amongst medical doctors practising in Cross River State, Nigeria is currently low, though confidence to diagnose it is high, this confidence should be backed with sound medical knowledge to improve doctors' capacity to respond to the emerging monkeypox infection.

**Keywords:** monkeypox, monkeypox virus, emerging viral infection, Calabar, Nigeria.

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## COVID-19 VACCINE ACCEPTANCE AND DETERMINANTS AMONGST DOCTORS PRACTISING IN CROSS RIVER STATE, NIGERIA

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### Abstract

**Background and Purpose:** COVID-19 vaccine is one of the most effective public health intervention approaches for the prevention of COVID-19. Despite its well-known efficacy and safety, a significant proportion of frontline COVID-19 healthcare workers remain hesitant about accepting the vaccine for whatever reasons. This study aimed to determine the acceptance rate and determinants of vaccine refusal among doctors in Cross River State, Nigeria. **Methods:** A cross-sectional online-based questionnaire was distributed to doctors via their medical association's WhatsApp platform in order to assess the rate of their acceptance of COVID-19 vaccines, and reasons for vaccine refusal. The predictors of vaccine acceptance were analysed by univariate and multivariate analysis (logistic regression). **Results:** The majority of them were below 43 years (77.4%, n=127) and male doctors (59.1%; n = 97). Also, a greater proportion of them are physicians (47.3%, n = 70). About three-quarters of the participants had received the COVID-19 vaccine (74%). The proportion of physicians that had received the COVID-19 vaccine was more than other doctors in other sub-specialities (81.4%; n = 57). The low perceived benefit of vaccination was the main reason given for COVID-19 vaccine refusal (46%). No association was found between vaccine refusal and suspected predictors. **Conclusion and Implication:** Our study revealed a high rate of medical doctors' COVID-19 vaccine acceptance, especially among physicians, and surgeons showing the lowest acceptance rate. A significant proportion would not take the vaccine because they perceived it lacks many benefits. To raise vaccine acceptance among doctors, more efforts on vaccine literacy that would target doctors from all sub-specialities, especially surgeons and incorporate vaccine benefits should be made.

**Keywords:** Covid-19 Vaccine, Covid-19 Vaccine Acceptance, Covid-19 Vaccine Hesitance, Calabar, Nigeria.

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Abstract For Oral Presentation at the 17<sup>th</sup> Annual Scientific Conference and General Meeting of The College of Nigerian Pathologist (CNP) – Cal 2022

## QUANTITATIVE ANALYSIS OF BASELINE HAEMOGLOBIN F AND A<sub>2</sub> IN PATIENTS WITH SCD IN SOUTH-SOUTH REGION OF NIGERIA

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### Abstract

**Background and Purpose:** The roles of HbF and to a lesser extent HbA<sub>2</sub> in the clinical phenotype of patients with Sickle Cell Disease (SCD) are well established with interventions being deployed to increase their levels in the blood for better clinical outcomes. As part of the management and monitoring of treatment, it is important to have baseline values of these parameters to serve as a reference or indicator of the need for intervention (particularly for HbF). In this study, we evaluated the baseline HbF and HbA<sub>2</sub> levels in patients with SCD in southern Nigeria. **Methods:** This descriptive cross-sectional study involved a review of the medical records of 34 patients with SCD attending the UCTH and RSUTH from 2017 to 2022. Details such as baseline HbF, HbA<sub>2</sub>, and demographics were extracted and analysed using IBM SPSS version 25. Bivariate analyses were done with an independent t-test and Pearson correlation test at a 5% significance level. **Results:** The average age was  $23.62 \pm 11.21$  years and more than half (55.9%) of the patients were females. Their mean baseline values were HbF ( $8.72 \pm 4.76\%$ ) and HbA<sub>2</sub> ( $3.35 \pm 0.97\%$ ). There were no significant relationships between patients' demographics (age and sex) and baseline HbF ( $r = -0.05$ ,  $p=0.77$ , and  $p=0.28$  respectively). Similarly, there were no significant relationships between patients' demographics (age and sex) and baseline HbA<sub>2</sub> ( $r = -0.10$ ,  $p=0.58$ , and  $p=0.197$  respectively). Furthermore, the relationship between HbF and HbA<sub>2</sub> was not significant ( $r = 0.33$ ,  $p = 0.058$ ). **Conclusion:** The mean baseline HbF levels in the study is relatively low and the patients will benefit from Hydroxyurea therapy.

**Key words:** Sickle cell anaemia, Baseline, Haemoglobin F, Haemoglobin A<sub>2</sub>, Hydroxyurea.

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## GLUCOSE RESULTS DISTRIBUTION AND QUALITY ASSURANCE PRACTICE IN CHEMICAL PATHOLOGY LABORATORIES.

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### Abstract

**Background and Purpose:** Laboratory practice is strategic to healthcare delivery because results produced are used for screening, diagnosis, treatment and monitoring of patients. In producing results, there is an acceptable margin of error, beyond which accuracy is questioned. This study is to evaluate results from laboratories using commonly measured substance (glucose) and possible reasons for these errors. **Methods:** Left-over plasma samples in fluoride oxalate containers were pooled and 5ml aliquoted into plain bottles and sent to various laboratories within and around Port Harcourt for glucose estimation. This was analysed fifteen times in duplicates for Glucose in the University of Port Harcourt Teaching Hospital's chemical laboratory and the closest ten were used to prepare control chart with which results from selected laboratories were assessed. Questionnaires were used to assess quality of laboratory practice. **Results:** The lowest glucose value was 0.6mmol/l, while the highest value was 12.8 mmol/l and the mean value was 2.4 mmol/l. The percentage of glucose result within the 3 standard deviation was 42% and the pattern of distribution of results range from high, to high normal, to mid normal, to low normal and low. 60% of laboratories were licenced, 10% were accredited and 30% were neither. **Conclusion and implications:** The percentage of results within the unacceptable range and the pattern of result distribution was not encouraging as results ranged from high, normal and low. This is a red flag that requires urgent intervention. It was noticed that licencing and/or accreditation did not necessarily guarantee quality results. Government must therefore put in place accreditation bodies that will accredit, regularly conduct on the spot assessment and ensure external quality assurance schemes/training.

**Keywords:** Pre-analytical, Analytical, Quality assurance

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