

Technology and Medicine, Perinatal Morbidity

Exploring Personal and Institutional Concerns Regarding the use of a Virtual Learning Environment

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Background: In July 2012, The Bahamas Government began a process to introduce a research and education network that would result in a virtual learning environment shared by educational institutions regionally and internationally.

Objective: To prepare for its implementation, a qualitative study on the personal and institutional concerns regarding the use of a virtual learning environment was undertaken at The University of the West Indies School of Clinical Medicine and Research, Nassau Campus, between February and March 2016.

Methods: Using the online Concerns Based Adoption Model Stages of Concern 35-item questionnaire, 49 post-graduate students, faculty and administrators voluntarily responded to an e-mailed invitation.

Results: The results matched a typical nonuser profile showing that there was little concern regarding the interaction with a virtual learning environment; most persons wanted more information and there were many personal concerns. Open ended questions further delineated these concerns and barriers into four constructs from the literature: interpersonal, training and technology, institutional and cost/benefit analysis. Versatility, efficiency, convenience, time management, enhanced learning and teaching and enhanced communication was among the perceived usefulness.

Conclusion: As there was little concern regarding the use of a virtual learning environment, these results help with planning and developing the necessary phases to facilitate organizational change.

Technology use among Students and Faculty of The University of the West Indies, School of Clinical Medicine and Research

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Objective: To determine the use of information technology among students and faculty in personal and academic activities

at The University of the West Indies School of Clinical Medicine and Research (UWI SCMR).

Methodology: A cross-sectional study was carried out using an anonymous questionnaire distributed to all students and faculty regarding their access to personal electronic devices and their activities with these devices.

Results: One hundred and fifty-five (62%) of 249 potential persons participated. Females accounted for 58.7%. Forty-six (29.9%) were undergraduate students, 53 (34.4%) post-graduate students and 55 (35.7%) faculty. Fifty-six (36.1%) were aged 20–29 years, 51 (32.9%) 30–39 years, 30 (19.4%) 40–49 years and 18 (11.6%) were aged 50 and older. All (100%) owned laptops as well as smartphones and 113 (72.9%) also had tablets. One hundred and fifteen (75.7%) took their laptop/tablet to work/school regularly. One hundred and forty-nine (96.8%) were versatile with PowerPoint and 128 (83.1%) reported being comfortable with statistical programmes and retrieving statistics from the Internet. Thirty-four (22.8%) used the library \geq once weekly, 70 (45.4%) rarely or never used the e-journals at the library and 82 (53.6%) rarely or never used library subscribed databases, while 88.4% have never worked with e-portfolios, 63% have never worked in a virtual learning environment and many rarely blog (71.2%) or twitter (84.4%) for work or academic purposes.

Conclusions: All students and faculty own smartphones and laptops and use them regularly for personal and social purposes but less so for academics. Many did not take advantage of the available library resources. Usage of such resources and other e-learning opportunities need be encouraged as UWI SCMR launches its virtual learning environment.

Innovative Interoperability among Mobile and Software Applications and a Virtual Electronic Medical Record System Promoting Patient Safety in a Medical Marijuana Programme

J Lombardo

This proposal is to develop a technology and standards-based solution for interoperability among mobile and software applications and a virtual electronic medical record system in support of a medical marijuana programme.

Using a dual smart card system to bring together existing technology applications, our approach will provide clinical integration and promote a safer environment by integrating a patient safety organization (PSO).

The advancement of medical marijuana programmes happened outside the standard drug development process, leading to the use of medicinal products that have not been well studied. Observational evidence has promoted the adoption of cannabis for medicinal purposes, however, in bypassing the standard regulatory process, thus drug safety questions remain and drug interactions need to be explored. The Empire State Patient Safety Assurance Network (ESP-SAN) at the University at Buffalo will create an environment that monitors the interoperability from the initial recommendation, changes to the prescription and medication dispensing.

The simultaneous monitoring of “open access” can also benefit the more traditional drug development approach by adapting both pre-clinical research and dose optimization during Phase I studies, and identifying key drug-drug interactions that need to be completed prior to a new drug application. Patient reported outcomes will be collected using HIPAA secure messaging or a mobile application platform.

Perinatal Mortality Trend in The Bahamas

V Sakharkar

Objective: To determine the perinatal mortality rate in The Bahamas in light of the cause identified in the public ward of the Princess Margaret Hospital (PMH), Nassau, The Bahamas.

Methods: This is a pooled analysis of data collected in yearly perinatal mortality audit for the years 2010 to 2015. Descriptive analysis of the data on still births and early neonatal deaths in PMH was carried out for this specific period to determine factors associated with perinatal mortality. There were total 19 690 deliveries during this six-year period in PMH averaging 3282 per year.

Results: Total deliveries in PMH public ward accounted for 67% of total deliveries in the Bahamas. Stillbirth rates per 1000 births were 12.9, 13.6, 11.8, 11.0, 12.8, 7.29 in the years 2010 to 2015. Neonatal deaths per 1000 births were 13.2, 10.5, 11.4, 9.4, 10.2, 10.4 in those same years. Seventy-two per cent of stillbirths were macerated, 24% were fresh and 4% were undocumented. Commonest complications associated with stillbirths were hypertensive disorders 24%, followed by placental abruption 22%, diabetes 10%, and 7% infection, trauma and preterm premature rupture of membranes (PPROM). Thirty-seven per cent did not have any obvious maternal complications. Twelve per cent of mothers who had stillbirth did not receive antenatal care. Common causes of early neonatal deaths were

extreme prematurity 23.5%, perinatal asphyxia 20.5%, congenital/chromosomal anomalies 20.5%, intracranial haemorrhage 8.8%, pulmonary hypoplasia and meconium aspiration 11%, sepsis 6%.

Conclusion: Trends in perinatal mortality remained the same in the past six years. More robust audits with implementation of recommendations are necessary to bring about changes.

Retinopathy of Prematurity at the Neonatal Intensive Care Unit of the Princess Margaret Hospital

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Objective: To determine the descriptive epidemiology (prevalence and risk factors) regarding retinopathy of prematurity (ROP) in a cohort of infants admitted to the Neonatal Intensive Care Unit (NICU) of the Princess Margaret Hospital (PMH).

Methods: This retrospective chart review of preterm infants admitted to the NICU was from January 2014 to September 2015. Eligible neonates were examined by an Ophthalmologist using indirect ophthalmoscopy. Their ROP screening documentation sheet, discharge summary and where needed, chart review provided study data. Available patient demographics and clinical data were gleaned, entered in to Excel and further analyses was done with IBM SPSS Statistical Software.

Results: Of 99 patients, 28.3% (28) had ROP in both eyes. Stage 1 was seen in the right-eye in 60.7% (17) and the left-eye in 57.1% (16) of the cases. Stages 2 and 3 were 25% (7) and 7.1% (2) bilaterally, respectively. Disease was found in 14.3% (4) cases. Three infants required intervention with intravitreal Bevacizumab and one subsequently required cryotherapy.

Univariate analysis showed a significant relationship between the occurrence of ROP and gestational age ($p = 0.038$), birthweight ($p = 0.002$), mechanical ventilator use ($p = 0.001$), anaemia ($p = 0.010$), packed red blood cell transfusion ($p = 0.020$) and candidaemia ($p = 0.002$). However, a non-significant relationship was found between the occurrence of ROP and respiratory distress syndrome (RDS), indirect hyperbilirubinaemia, continuous positive airway pressure (CPAP) and bacteraemia (all $p > 0.05$). Duration of oxygen therapy and candidaemia remained significant variables after multiple logistic regression analysis.

Conclusion: The estimated prevalence of ROP in this study was 28.3%. Duration of oxygen therapy > 7 days and candidaemia were significant risk factors for ROP.