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Postoperative cognitive decline in elderly patients undergoing surgery with general anaesthesia

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Objectives: Postoperative cognitive decline (POCD) refers to a decline in mental processes, weeks or months subsequent to surgery. The purpose of this research was to identify instances and risk factors of POCD in surgical patients, over the age of 60 years, after undergoing general anaesthesia (GA).

Design and Methods: Elderly patients undergoing GA were enrolled. Initially, each participant was assessed within 24 hours prior to surgery using a standardized mini mental status exam (SMMSE) and the Montreal cognitive assessment (MoCA) tools. These examinations were repeated postoperatively at one day and one week to detect mild, moderate or severe cognitive declines. Anaesthetic drugs, duration, surgery and demographic data were recorded.

Results: Twenty-five patients were studied. Although only two cases (8%) showed a slight POCD up to 10–14 days, there was a high correlation between baseline MMSE and MoCA scores with those of immediate and 24-hour postoperative scores ($p < 0.001$). The paired sample *t*-test analyses also did not show any major differences between the baseline and postoperative scores. Factors such as number of anaesthetic drugs used and duration of anaesthesia did not influence cognitive dysfunction ($p > 0.05$).

Conclusion: Modern anaesthesia drugs and techniques do not seem to cause any cognitive dysfunction in the elderly. The probable reason may be due to the more beneficial pharmacokinetic and dynamic properties of the drugs. The guidelines for elderly undergoing ambulatory anaesthesia should be revisited.

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Implementing the World Health Organization safety checklist in public operating theatres in Trinidad and Tobago

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Objectives: To evaluate the issues of compliance and to identify barriers to implementation of the World Health Organization (WHO) surgical safety checklist in Trinidad and Tobago.

Design and Methods: An eight-item questionnaire survey, created *de novo* was distributed among the operating theatre staff of five public hospitals using convenience sampling.

Results: The response rate was 95% (159/168). Seventy-nine per cent of the respondents were aware of the existence of the checklist, and 75% knew the checklist was implemented in their hospital. However, there was significant difference between hospitals ($p < 0.001$). Of these respondents, only 47.5% “always” used the checklist; < 5% of respondents affirmed to have never used the checklist. The respondents agreed that the implementation of the checklist would improve surgical outcomes (78%) and prevent surgical errors (82%). Ninety-one per cent wished that the personnel in the operating rooms used the checklist if they underwent surgery. Perceived compliance increased with age and was higher among nurses. The main barriers that affected usage were getting the entire team together prior to patient induction (53%), perceptions of increased time added to surgery (37%) and the attitudes of the surgeon toward team discussions (28%). Perceived benefits of the checklist were different among anaesthesiologists, surgeons and physicians and was statistically significant ($p = 0.03$); compliance was higher for females ($p = 0.038$).

Conclusion: Despite the perceived benefits of the surgical safety checklist, implementation and standardization issues exist in the hospitals studied. These issues must be addressed by developing teamwork, staff motivation, education and quality initiatives to ensure compliance to checklist usage.

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Time audit: Accident and Emergency registration to admission on the paediatric ward at the Queen Elizabeth Hospital

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Objective: To perform a time study to audit the lag time for emergency paediatric admissions.

Design and Methods: This descriptive prospective study was conducted to audit the period from registration in Accident and Emergency (A&E) to point admission time, in successive paediatric emergency room admissions aged < 16 years during three months. Data were collected from the A&E and inpatient records included registration time

and times spent between triage to A&E physician, primary diagnosis, treatment received as well as specialty referral time, ward admission time and paediatric physician contact time.

Results: One hundred and forty-eight paediatric patients were registered and admitted from the A&E: 83 males (56%) and 65 females (44%) aged five days to 15 years, modal age being < 1 year. Eighty-nine per cent were triaged in < 1 hour. Triage to physician contact time ranged from three to six hours in 37% of patients; registration to specialty contact referral time was < 1 hour in 37% of patients; specialty response time was < 1 hour for 97% of referrals; acceptance by specialty to ward arrival ranged 1–3 hours for 74% of patients and to point paediatric physician contact was < 1 hour in 56% of cases. **Conclusion:** Improvements in the lag time from registration to paediatric physician contact time are needed. Identified factors, need to be addressed to improve efficiency of patient care delivery.

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Knowledge, attitudes and practices of healthcare professionals toward prognostic scoring systems in Trinidad

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Objectives: Prognostic scoring systems (PSS) can aid in assessing the severity of illnesses to better predict the outcomes of diseases. There are little data to confirm that these are being applied by local healthcare professionals. This study aimed to determine the knowledge, attitudes and practices (KAP) of healthcare professionals regarding PSS, and the factors influencing them.

Design and Methods: In a hospital-based survey, 176 healthcare professionals in the public and private sector managing acutely ill patients, chosen by simple random sampling, responded regarding PSS to a questionnaire developed *de novo* in a Likert scale format.

Results: Sixty-one per cent of respondents were aware of PSS, 47% had a working knowledge, 40.9% thought that knowledge of PSS was very important but 47.7% said they never used PSS. Generally, doctors and nurses with greater seniority and private hospital employees had more knowledge of PSS, a more positive attitude toward them and applied them more frequently. Most respondents had a working knowledge of PSS but did not apply it regularly. Professionals with greater seniority had more work experience and greater knowledge of tools such as PSS. The public hospital employees responded more negatively

to the use of and attitude toward PSS.

Conclusions: Information on PSS should be included in the medical and nursing school curriculum to increase awareness to improve the application of evidence-based clinical practice. This will assist in guiding major decisions in low resource settings.

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In vitro comparison of seven metformin formulations

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Objectives: The World Health Organization (WHO) desires to provide affordable and accessible essential medicines globally, which can be achieved with the use of generic drugs. However, to confirm equivalent quality and performance to the innovator, the dissolution method can be employed. This study included the dissolution process to compare seven metformin 500 mg formulations.

Design and Methods: Comparison was made to two Glucophage® brands by weight, drug content and dissolution profile. The dissolution Apparatus 2 (paddle) was employed at 75 rpm in a pH 6.8 buffer at 37 ± 0.5 °C. One millilitre samples were removed at times 10, 15, 20, 30, 45 and 60 minutes without replacement, diluted then analysed with ultraviolet spectrophotometry. One-way analysis of variance (ANOVA) compared the weights and DD Solver software, an add-in to Excel® 2007, was used to calculate the similarity (f_2) and difference (f_1) factors, dissolution efficiency (DE), mean dissolution time (MDT) and area under the release curve (AUC). However, f_2 was calculated only if the drug release was less than 85% within 15 minutes.

Results: The weights were significantly different ($p \leq 0.05$) and each of the products demonstrated drug content within 95–105%. All seven formulations except Drug 2 acquired $\geq 85\%$ drug release in 15 minutes and the latter drug showed an f_2 value that was less than 50.

Conclusions: The metformin formulations proved pharmaceutically equivalent to the innovators; nevertheless, Drug 2 illustrated a different dissolution profile to the other products in phosphate buffer of pH 6.8 and hence, deviated from WHO recommendations.

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Mobile track reporting on replenishment of depleted artemisinin-based combination therapy stocks at health facilities in Uganda. A retrospective review

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Objective: To assess utilization of mobile tracking (mTrac) in stock management of artemisinin-based combination therapy (ACT) at health facilities in Uganda.

Design and Methods: Ministry of Health, Uganda, rolled out mTrac to health facilities (HFs) in the 112 districts in four phases. Using personal mobile phones, health workers sent weekly surveillance reports to a toll-free short code about notifiable diseases, malaria case management and stock quantities of ACTs. A retrospective review of ACT reports submitted weekly using mTrac was conducted. The reporting period was weeks 12–52 between March 12 and December 31, 2012 for phase 1 and 2. Data for 19 950 reports were analysed using SPSS version 17 based on three indicators: timeliness in reporting, stock-out and approved reports.

Results: Of the 19 950 cumulative ACT reports submitted, 11 570 (58%) were received on time. Timely reports came from health centre (HC) IIs 7499 (64.8%) then HC IIIs 3307 (28.6%), HC IVs 513 (4.4%) and general hospitals (GH) 251 (2.2%). Seven thousand five hundred and eighty-one (38%) reported stock-out in all ACT pack sizes while 983 (8.5%) reported stock levels at zero. In total, 13 550 (67.9%) reports were approved by the district health teams (DHTs).

Conclusion: Health centres II and III have shown utilization of mTrac to submit their weekly ACT reports on time. Hence, fewer HFs reported ACT stock-out. Most reports were approved by DHTs, a proxy indicator for the system uptake. However, follow-up is required for GHs and HC IVs in order to improve timeliness in reporting.

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An assessment of the barriers and facilitators for a national public health observatory in Trinidad and Tobago

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Objectives: To assess facilitators and barriers for creating a national public health observatory (PHO) in Trinidad and Tobago (T&T), which could serve as a model for other Caribbean countries.

Design and Methods: A qualitative study with 15 one-on-one key informant interviews (April to September 2013) was conducted. Key informants worked within the health-

care sector in T&T. A semi-structured interview guide explored knowledge, attitudes and beliefs about creating a PHO, enablers and barriers to creating and sustaining a PHO, legal considerations and requirements for human resources and information technology.

Results: The majority of participants supported the development of a national PHO, recognizing its value in informing their work. They indicated that a national PHO could provide information to support evidence informed decision-making for health policy and strategic planning; facilitate data management by establishing data policies, procedures and standards; increase the utilization of data through synthesizing and disseminating information; and provide data for benchmarking. Informants identified several current barriers including the perception that data collection is not important; untimely availability of data; limited synthesis, dissemination and utilization of data to inform decision-making; and challenges related to the allocation of human resources and existing information technology.

Conclusion: There is support for the development of a national PHO in Trinidad and Tobago but a number of barriers need to be addressed. The solution lies in adopting a complex system perspective that addresses the challenges at all levels with a sense of shared ownership but with clear roles and responsibilities.

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Investigating the relationship between socio-economic status and equity in the allocation of healthcare services: The case of St Vincent and the Grenadines

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Objectives: To investigate the relationship between socio-economic status and equity in the allocation of public healthcare services by the primary healthcare delivery system in St Vincent and the Grenadines.

Design and Methods: The sample frame consisted of the persons seeking treatment for diabetes between 2006 and 2010 at the nine public community healthcare districts, and which were managed by the Community Nursing Programme of the Ministry of Health. The annual utilization of these services was used to measure healthcare need. The country's census divisions were re-classified into nine communities to correspond with the nine health districts, and ranked by poverty gap to measure socio-economic status. A calculated healthcare expenditure measured the allocation of the districts' resources. A decrease in healthcare expenditure with an increase in healthcare need in the poorest health district compared with the reverse in

the wealthiest district suggested the presence of inequity. Time series cross-section analysis with fixed effects was used to evaluate the existence of inequity within the health districts.

Results: At a critical value of 4%, the poorest health district of Georgetown had an equity index of -0.08 while the richest, the Northern Grenadines, an index of -0.36.

Conclusion: Socio-economic status was not a significant factor influencing the allocation of healthcare services as inequity was greater in the wealthiest health district.

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Is there a demand for national health insurance in St Vincent and the Grenadines?

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Objective: To assess if there is a demand for national health insurance (NHI) in St Vincent and the Grenadines (SVG) and to examine if socio-economic status (SES) and geographic differences matter in the demand for such service.

Design and Methods: Samples were selected by simple random sampling, including strata on rural, semi-urban and urban communities to ensure representativeness. A pre-tested interviewer-administered questionnaire was used to collect the data from a total of 400 respondents. Data were examined for correlation between SES and geographic locations with the demand for NHI.

Results: More than half (69.5%; n = 278) of the respondents indicated their demand for NHI. Chi-squared analysis showed that age ($p < 0.001$), education ($p < 0.001$), monthly income ($p < 0.001$), employment ($p < 0.001$), health status ($p < 0.001$), health insurance ownership ($p < 0.001$), and level of satisfaction with the public healthcare system ($p < 0.001$) all matter in the demand for NHI. The results also showed that there was a greater demand among urban communities.

Conclusion: There is a demand for a resource and risk pooling mechanism such as NHI in SVG. Socio-economic status and place of residence do matter in people's demand for NHI. As Caribbean governments seek alternative ways of financing the health sector, establishing NHI may serve as a viable option.

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A national investment reaps national dividends: 65 years later – The Bahamian graduates of The University of the West Indies, Faculty of Medical Sciences

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Objective: To determine the yield in national investment in The University of the West Indies (UWI) undergraduate medical degree programme for The Bahamas.

Design and Methods: A review of the following databases was undertaken from 1948 to July 2013: human resource files – Princess Margaret Hospital; registration files – Bahamas Medical Council; and UWI student database. For verification, physicians were contacted directly in person via telephone or e-mail as required.

Results: Four hundred Bahamians graduated as medical doctors. During 1957–1980, 1981–2000 and 2001–2013 there were 44, 120 and 236 graduates, respectively, with a female enrolment shift from 14% to 46% to 68%. Of 372 UWI trained fully registered physicians, 97% were employed by The Bahamas government for at least one year beyond internship, with over 50% employed in the public sector over the span of their medical careers. Thirty-three doctors have migrated with only eight not providing service at all in The Bahamas after internship. Two hundred and forty-four (62%) embarked on post-graduate training, with 154 being credentialed with diplomas or specialist degrees. Thirty have gone on to subspecialty training with four still in training. For persons currently in specialty training, 52 of the 72 are in programmes in Bahamas.

Conclusion: The national investment in the UWI undergraduate medical degree programme has yielded great dividends in human resource development and retention