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NOTES FROM
THE EDITOR'S DESK

WHY DOES SERVICE DELIVERY AT POLYCLINICS REMAIN SO NEGLECTED?

During 2022, Barbados has made important progress in health promotion by doubling its tax on sugar sweetened beverages to 20%, and by prohibiting the sale of alcohol to those under 18 years old. With the pending (but delayed) implementation of front-of-package warning labelling, breathalyzer testing and launch of a comprehensive School Nutrition Policy, there is the potential to create some tangible forward momentum.

The threats to this incremental progress are explicitly outlined in the SWOT analyses presented in Barbados' National Strategic Plan for the Prevention & Control of NCDs 2020-2025:

- Continued reluctance of policymakers to develop and implement policy and legislation related to certain aspects of risk factor reduction, with inadequate "push" to do so from the public and key constituents ("policy inertia").
- Private sector interference.
- Name and nature of NCDs, which are not fully understood by many stakeholders.
- Inadequate prioritization of, and allocation and mobilisation of financial and human resources for, NCD prevention and control.
- Insufficient technical and administrative support for the NCD programme in the MHW.
- Strategic plans related to health and NCDs that are not finalised, disseminated widely, and monitored, to drive multi-sectoral action in achieving agreed objectives.

This document also highlights the recommendation from WHO's UHC Global Health Report for governments to urgently allocate at least 1% of GDP to primary care (currently only 0.7% in Barbados). This shift in financing is the necessary first step, and is desperately needed to improve provision of 'Best Buys' such as cardiovascular risk management, diabetes & mental health care, cancer screening and immunization. As we all know, it is at the public health and primary level where healthcare financing saves the most lives and livelihoods.

The sad reality is that successive governments have largely ignored our polyclinics. Our healthcare workers and public health officials are doing their best, but are not given the tools and support they need. Staffing levels are depleted and burnout levels are high; the physical and IT infrastructure and equipment is inadequate; and care delivery is neither patient-

EDITORIAL... cont'd

centered nor aligned with the chronic care model. Despite soaring rhetoric and the excellent strategic plan (mentioned above) from the existing administration, there has been little action to arrest the steady deterioration of primary care which was accelerated by the COVID-19 pandemic.

However, millions have been spent on refurbishment of the emergency department at QEH (but with limited tangible improvement in the provision of care). Government has announced plans to spend $160 million to replace equipment at the QEH over the next five years. A new Geriatric Hospital is to be built.

Dr Sonia Browne, the new Minister of State in the Ministry of Health and Wellness with Responsibility for the QEH and NCDs, has been frank about the need for more urgent progress on implementing health policy, and adequately financing preventative health initiatives within primary care. In recent parliamentary debates she remarked that "while the public believes more funding needs to be pumped into the tertiary institution, [she] believes that money needs to be spent on polyclinics to lift some of the burden off the hospital". Indeed, Dr Browne's opinion is in line with the evidence and expert advice.

A 2015 World Health Organisation publication entitled 'The Investment Case for Non-communicable Disease Prevention and Control in Barbados' highlights the potential for a >4:1 return on investment over 15 years with the implementation of key preventative measures at the public health and primary care level.

Another 2015 publication from the Central Bank of Barbados entitled 'Determining the optimal allocations of governments healthcare expenditure budgets', concluded that "only government's spending on primary healthcare positively influences labour productivity, and a reallocation of finances from the hospital services to fund the primary healthcare system while simultaneously cutting total spending can yield long-term benefits to both productivity and overall economic growth".

If all the technocrats and experts (even their own Minister) are telling them to do so, and the intervention is cost-saving, the golden question is: why does government not act to improve the quality of primary care?

Dr Browne's words may be revealing: perhaps politicians perceive that the public wants investment in tertiary care, and sees little political benefit in improving primary care. This would not be unique to Barbados.

The recently published report of the Lancet Global Health Commission on Primary Care Financing highlights that for many governments, it is often easier, indeed politically necessary, to

- divert healthcare financing towards the threat that is perceived as most immediate – ie Zika, COVID-19 & the reduced tourism revenue linked to these pandemics.
- focus on capital works projects and expensive equipment purchases - typically related to specialized care - where the results are most tangible and, dare we say, corruption is most easily facilitated and hidden.

Academics and health advocates therefore need to re-frame and amplify our public arguments for primary care financing as a matter of social justice, and raise the political motivation to invest in primary care. We must highlight the daily challenges of traversing our polyclinic system for the average citizen, and juxtapose this with the unrealized potential to improve their quality of life.

Every day, the most vulnerable people in our population seek care at polyclinics, and wait hours, some discovering that their blood test results are not available because there was no reagent at the lab, or that some of their medications are out of stock at the pharmacy, or even that there is only enough time for a cursory consultation because of low staffing levels.

Apart from the frustration and demotivation, these routinely negative experiences have real economic and health consequence, forcing vulnerable people to either spend their limited cash in the private sector or to forgo care.

Under-resourced and under-financed primary care services trap people in poverty rather than providing the social mobility and safety net which comprise a main intention of the system.

Our people deserve better from our leaders, and it remains the collective responsibility of physicians in practice across the island, to be highly vocal, and demand a far better delivery of health care services on behalf of those who depend on our polyclinics, and are highly vulnerable.

REPORT FROM THE 66TH ANNUAL CARPHA HEALTH RESEARCH CONFERENCE, 2022

For 2022, the 66th Annual CARPHA Health Research Conference was hosted between September 15–17, 2022, at the Marriott Hotel in Kingston, Jamaica.

The theme was COVID-19 and Digital Health:Transforming, Connecting, Informing Public Health, and the presentations were available in both the in-person and virtual format.

In this article, the presentations which were accepted in the form of oral and poster presentations by researchers based in Barbados, are shared.

Oral presentations:

Uncovering the driving forces behind the trend in coronary heart disease mortality in Barbados from 2009–2018

F Carter, W Jones, NP Sobers

Objective: To investigate the risk factors contributing to trend in coronary heart disease (CHD) mortality over the ten-year period 2009–2018

Methods: Secondary data analysis was conducted on existing databases: the Barbados National Registry for chronic non-communicable diseases and the Non-Communicable Disease Risk Factor Collaboration. We calculated age standardized incidence rate from 2009-2018. Using cases of myocardial infarction from the Barbados National Registry, we examined the impact of BMI, hypertension, diabetes and raised cholesterol on death before discharge, using multivariable logistic regression analysis.

Results: In 2009, CHD mortality rates were higher in men with 77.8 per 100,000 [95% UI 70.7–84.1] compared to women 63.0 per 100,000 [95% UI 55.5–68.9]. After declining to the lowest rates in 2015, they rose to 66.0 per 100,000 [95% UI 55.5–78.0] in men and 40.0 per 100,000 [95% UI 32.99–48.30] in women by 2018. Trends in risk factor prevalence revealed increases in diabetes and obesity and stable raised blood pressure and mean cholesterol rates. Patients with diabetes are 2.97 times [95% CI 1.93–4.56] more likely to die from CHD than non-diabetics. Hypertensives are 2.37 times [95% CI 1.42–3.96] more likely to die from CHD than non-hypertensives. Previous aspirin use significantly reduced the odds of dying from CHD by 0.71 times [95% CI 0.64–0.79].

Conclusion: Gains made to decrease CHD mortality in Barbados appear to be reversing. Diabetes, hypertension and obesity appear to be the main drivers of this reversal.

A comparative study of the spectrum of non-COVID-19 diagnosis among children visiting one of the pediatric primary health center during the COVID-19 pandemic and the immediate pre-pandemic period in Barbados.

A Kumar

Objective: In this study, we look at the impact of the pandemic from a different perspective. We compare the spectrum of non-COVID-19 illnesses which necessitated visit to a pediatric primary health facility during this pandemic and the pre-pandemic times.

Methods: This descriptive report is based on a prospective routine clinical audit. Visits during the period April 1st 2020 through January 31st, 2022 were included in this report.

Visits during the period April 2018 through March 2020 were used as historical control. The primary outcome was the difference in nature of the primary diagnosis during the pre-pandemic and pandemic periods.

Results: There were 1001 visits during the pandemic compared with 1964 visits during the pre-pandemic period. The proportion of visits from children in the age group 0–5 years during the pandemic (56.7%; 95% CI = 53.6%–59.8%) was significantly lower than the pre-pandemic period (63.3%; 95% CI = 61.1%–65.4%). The number of visits from ARC, asthma phenotypes, respiratory infections and Acute Gastroenteritis were all significantly reduced during the COVID-19 pandemic.

Conclusion: A decline in the visits for routine care which occurred was almost entirely from allergic rhinitis, asthma phenotypes, respiratory infections and gastrointestinal infections during this pandemic, while the visits for other conditions did not change significantly.

RESEARCH FORUM... cont'd

COVID-19 in Barbados – lessons from a paediatric perspective

PM Lashley, NP Sobers, GHE Gay

Objective: To describe the case frequency, incidence, and case fatality rate attributed to COVID-19 in children and adolescents in Barbados for the period March 2020-December 2021.

Methods: Using published case registries over the 22-month study period, incidence and case fatality rates of COVID-19 cases and deaths were classified by sex in the 0 to 18 years age group. Logistic regression was used to examine associations between post COVID-19 symptoms and age, sex and clinical classification.

Results: The total of 6248 COVID-19 confirmed paediatric cases were 21.7% of all reported cases, and constitutes 22.1% of the Barbadian population. Eighteen (0.3%) cases required hospital or specialist paediatric care. There was one fatality among hospitalized cases and one fatality attributed to multisystem inflammatory syndrome in children (MIS-C). In our sample of 292 children followed up at a paediatric clinic after discharge from isolation, the mean age was 8.8 years and 139 (47.6%) were male. Of 292, 37.5% were asymptomatic, 62.5% had mild/moderate symptoms. Post- COVID-19 symptoms were reported in 16 (5.5%, (95% 2.9%, 8.1%)) children. There were no significant differences in post-COVID-19 symptoms by gender or age. Children with mild/moderate symptoms were 9.7 times (95% CI 1.3, 74.5) more likely to have post-COVID-19 symptoms than those who were asymptomatic.

Conclusion: In Barbados, case frequency and case fatality rate in children and adolescents was similar to reported incidence in North America. Despite school closures, children's infection rate was similar to their population proportion.

Assessing Microvascular Complications in Diabetic Foot using Novel Diagnostic Equipment

A Greenidge, KR Quimby, I Hambleton, R Landis

Objective: To investigate assessment of endothelial dysfunction, tissue oxygenation and neuropathy by non-invasive devices in diabetes and diabetic foot.

Methods: The Wound Healing Study is a case control study in adults with type II diabetes, recruited from healthcare facilities. Fifty cases (diabetic foot) and fifty controls (no diabetic foot) were matched for age, sex and diabetes duration. Vascular assessments including endothelial function and arterial stiffness were measured using EndoPAT 2000 and oxygenation was assessed by the RM200 SO2 monitor. Vibration Perception Threshold readings were also taken using the Neurothesiometer. Odds ratios were determined using logistic regression; unadjusted and adjusted for age, sex and diabetes duration.

Results: 17.8% of cases and 36.7% of controls were categorised with impaired endothelial function. There was no difference in the measurement of arterial stiffness between the two groups. 37.2% of cases vs 30.8% of controls were classified as having hypoxic limbs (OR 1.17, 95% CI 0.45–3.01). 18.6% of case measurements were hypoxic compared to 15.4% in the controls (OR 1.00, 95% CI 0.98–1.03). 52.0% of cases and 18.4% of controls exhibited loss of the protective sensation in the feet (adjusted OR 5.42, 95% CI 2.07–14.21, p = 0.01).

Conclusion: Endothelial dysfunction detected by EndoPAT, and tissue SO2 detected by RM SO2 do not have as great an input on microvascular damage in diabetic foot, as nerve damage, detected by Neurothesiometer.

Diabetes self-Care in a Barbadian Population: With and without diabetic foot.

A Greenidge, KR Quimby, I Hambleton, S Anderson, R Landis

Objective: To elucidate aspects of diabetes self-care which may be risk factors for having a non-healing foot ulcer.

Methods: The Wound Healing Study (WHY Study) is a case control study in adults with type II diabetes, recruited from the public Queen Elizabeth Hospital, Polyclinics and private physicians. Fifty Cases (diabetes and foot wounds) and 50 controls (diabetes and no foot wounds) were matched for age, sex and duration of diabetes. The Summary of Diabetes Self Care Activities (SDSCA), a questionnaire on diabetes self-management which quantifies the management of various aspects of a diabetes care management regimen such as general diet, specific diet, blood-glucose testing, exercise, foot care and smoking, usually over the previous seven days, nwas administered. Summary measures for diet, blood-glucose testing, exercise and foot care were the mean number of days per week on a scale of 0–7.

Results: Cases consumed their carbohydrates evenly throughout the day significantly less days per week than the controls, 0.8 days vs. 1.8 days respectively (adjusted OR 0.81 95% CI 0.66–0.99; p = 0.04). Cases exercised less than controls during the week, an average of 0.2 days of specific physical activity such as swimming, biking or walking for a minimum of thirty minutes, compared to the 1.5 days of the controls (adjusted OR 0.61 95% CI 0.43–0.86; p = 0.01).
Conclusion: There may be inadequate understanding among

the diabetic population on the importance of self care activities in affecting diabetes complications and their progression.

Barriers to mental health treatment among young adults aged 18–35 in Barbados: Exploring the Health Professional perspective

R Cox, N Greaves

This study investigated the perceived and experienced barriers and facilitators to mental health treatment amongst young adults ages 18–35, in Barbados from the perspective of health professionals actively involved in care provision.

Methods: Purposive sampling using the principle of maximum variation was done in three primary health care centres and the lone psychiatric hospital on the island of Barbados. This resulted in the conduct of 9 semi-structured virtual interviews. Interviews were audio-recorded, transcribed verbatim by the interviewer and subject to thematic analysis with constant comparison. Data was managed by Atlasti 8 software.

Results: Twelve thematic variables were identified as influencing mental health treatment seeking among young adults. Of these low mental health literacy, stigma and non-supportive environments negatively influenced initial help-seeking behaviour. While beliefs pertaining to the side effects of medication and waiting times associated with accessing services were found to interrupt long term compliance with treatment regimes. Importantly treatment was facilitated by a triad of family support, the quality of services and the presence of a trust relationship between patients and health care providers.

Conclusion: Whilst many factors influenced treatment access and continuity of care, it is likely that strategies which simultaneously reduce stigma, and increase mental health literacy in the general population will be useful. Further research is needed to gather the perspective of youth (those with and without mental health illness) to develop a holistic view of this phenomenon as a means of informing future service design and delivery.

Food security and food safety implications for sustainable food systems in CARICOM

H Harewood, N Greaves, A Foster-Estwick, L Dunn, TA Samuels, N Unwin, MM Murphy

Objective: To elucidate the social and economic drivers of the diets being chosen and consumed by populations in Jamaica, Saint Kitts and Nevis, and Saint Vincent and the Grenadines.

Methods: Qualitative methodology allowed in-depth exploration of the perceptions and lived experiences of purposively recruited participants involved in the food system from production to consumption. The study was undertaken in two phases: seventy public, private and civil society stakeholder interviews conducted June-August 2018 (Jamaica:41; St Kitts and Nevis:14 and St Vincent and the Grenadines:15); and fourteen 8-participant focus groups conducted May–July 2019 (Jamaica: 6; St Kitts and Nevis:4, and St Vincent and the Grenadines: 4). Thematic data analysis was supported by Dedoose software.

Results: Analysis identified several substantive themes representing stakeholders' explanation about the factors determining which items are imported, distributed and consumed. An overarching theme was that threats to the local food supply and consumption are multi-factorial. Economic rather that health concerns determined which foods are supplied and consumed and unhealthy foods seemed more affordable. Climate change threatened food security through reduced crops and loss of livelihood. Women of single headed households and women in agriculture were more at risk for food insecurity. Local and regional foods though preferred by some participants, were inconsistently available. Wide ranging food safety concerns included pesticide residues and imported allegedly "fake food".

Conclusion: Interventions to improve access to healthy foods need to be gender sensitive. Sustainable intra-regional trade may be an important pillar for improving household nutrition and health.

The Microbial burden in Poultry Broiler Chickens and the knowledge, attitudes and practices of the poultry plant workers.

J C Browne, M St-Hilaire

Objective: To determine the correlation between the findings of Knowledge Attitude Practice survey (KAPs) administered to poultry processing plant workers with the microbial burden of poultry.

Methods: A cross-sectional study was deployed to poultry workers randomly selected from 18 poultry plants across the seven polyclinics under the Ministry of Health & Wellness in Barbados. Consenting respondents completed an administered KAP questionnaire composed of 48 questions based on killing, evisceration, cutting, packing, and training history in the poultry processing plant. Responses were uploaded to REDCap and statistically analyzed using Stata Version 16.1. Chicken breast meat sample data obtained from results as part of the "CISARA"

from the Veterinary Services in Barbados were also analyzed. A multivariant regression model was used to analyze the possible impact of the level of food safety training compared with respondents' sex, age, and experience.

Results: Respondents (n = 201) were comprised of managers (n = 18) and food handlers (n = 183) (M 28.4%, F 71.6%). Food handlers' odds of food safety training decreased by 42% for every additional year of experience (OR = 0.58, p < 0.001). Isolates of Campylobacter spp. and Salmonella spp. were spread across all catchment areas with highs ranging from 6% and 91% respectively, in the Randal Phillips catchment to lows of 2% and 2% respectively, in the David Thompson catchment.

Conclusion: A comprehensive training program is needed to address gaps in knowledge, attitudes and practice found in the study to improve the handling practices of poultry meat workers.

Innovations in Continuing Medical Education during the COVID-19 pandemic

KR Quimby

Objective: To use the Enhances Learning, Innovation Adaptation, and Sustainability (ELIAS) framework to map the adaptation of the continuing medical education (CME) programme at The University of the West Indies (The UWI) from a face-to-face to online format during COVID-19. 5 phases: measurement – identification of discrepancy between required and projected outcome; disconfirmation – identifying changes needed to rectify the discrepancy; contextualization– formulating a plan that is congruent with the organizational structure; implementation–executing the plan; and routinization – embedding the innovation into the organization's processes.

Results: With COVID-19 directives prohibiting face-to-face meetings, we would be unable to supply the required annual CME credits to physicians. To rectify this, contextual changes were made, including shifting to an online format with shorter, more frequent sessions. We leveraged the technological and administrative armamentarium available at The UWI by piggybacking on the pre-existing Zoom Webinar and TouchNet payment systems. The CME coordinator acted as change champion, gaining accreditation for the novel format from Medical Council, exploring and enabling online engagement of medical practitioners and facilitating activities that increased self-efficacy in users of the innovation. Evaluation 1-year post innovation reported an adequate supply of CME credits. Subsequent adoption and routinization of the online format were enhanced by the relative advantage over the face-to-face option and compatibility with the public health directives.
Conclusion: The online innovation was successful. Use of a framework to map the process adds scientific rigor and, if needed, can guide the expansion into a regional CME body.

Medical student satisfaction in online modified clinical clerkship curriculum during the COVID-19 pandemic.

PM Lashley, NP Sobers, MH Campbell, M Emmanuel, N Greaves, M Gittens-St. Hilaire, MM Murphy, MAA Majumder.

Objective: The COVID-19 pandemic has caused significant disruption to medical education and clinical training. This not only affected delivery of the clinical curriculum but also resulted in stressors which may impede learning. This study aimed to assess the impact of a modified on-line curriculum in selected clinical clerkships in the Faculty of Medical Sciences, UWI, Cave Hill Campus, during the COVID-19 pandemic.

Design and Methods: Fourth and Fifth year medical students completed an online survey in January 2021 covering the following areas: student satisfaction, self-efficacy (Online Learning Self-Efficacy Scale) and perceived effectiveness of online versus face-to-face learning. Students who agreed/ strongly agreed to the statement "Overall, I was highly satisfied with the clerkship placement" were classified as satisfied.

Results: 88 of 131 students completed the survey (response rate = 67 %). More than half of students (51%) were satisfied with online clerkship delivery. Fewer than half of students (46%) believed online learning effectively increased their knowledge, compared to 56% for face-to-face learning. Perception of effectiveness of online learning and face-to-face teaching of clinical skills was 18% and 89%, respectively (p < 0.0001). Fewer students perceived online teaching to be effective for developing social competencies (27%) compared to face-to-face instruction (67%) (p < 0.001). Students satisfied with online learning were more likely to be female (OR = 2.6) and older respondents. Mean self-efficacy scores were higher for persons who perceived online teaching to be effective for increasing knowledge, improving clinical skills, and social competencies. Students' perception of online learning was strongly associated with online self-efficacy.

Conclusion: Students perceived online learning to be the least effective for enhancing clinical skills. Students' perception of effectiveness of online learning was strongly associated with online self-efficacy. Further research to examine how the perception of online delivery impacts student performance in online learning is recommended. Educators have been challenged to design online programmes that facilitate development of clinical and social skills. Understanding medical

students' experiences and identifying unmet needs will help improve clerkship curricula and support medical students during and after the COVID-19 pandemic.

The role of non-Pharmacological interventions (NPI's) and school closure in the spread of COVID-19 in the childhood population of Barbados.

PM Lashley, GHE Gay, NP Sobers

Objective: To describe the role of non-pharmacological interventions (NPIs) in the spread of COVID-19 in children and adolescents in Barbados for the period March 2020- December 2021.

Design and Methods: A descriptive cross-sectional study utilizing published case registries over the 22-month study period. The incidence of COVID-19 cases and deaths were calculated and classified by sex , gender, as well as the month and year of diagnosis to identify trends in the numbers related to the total number of cases reported in the 0 to 18 years age group. The incidence data was correlatedwith the time of school closures and other NPI's .

Results: A total of 6248 COVID-19 confirmed cases were documented in the 0 to 18-year age group, representing 21.7% of all reported cases, and constituting 22.1% of the Barbadian population. During the periods of school reopening the number of childhood cases remained low with small spikes following these periods. The incidence of COVID-19 was similar in the 0 to 4, and 5 to 14 age groups despite the 0 to 4 age group being in nursery school during the time of the second outbreak

Conclusion: The surge in childhood cases in Barbados did not reflect opening of schools and day care facilities, but rather seemed to correlate with the general rise in cases in the community in general. NPIs continued to keep similar incidence rates as those in North America, despite low vaccination rates in the childhood and adolescent populations.

An innovative, blended, and supplementary clerkship to minimize clinical training gaps identified during the COVID-19 pandemic.

K Connell, K Krishnamurthy, MH Campbell, H Harewood, N Greaves, A Kumar, D Springer, M O'Shea, A Harvey, PM Lashley, OP Adams, MAA Majumder

Objective:

1. To identify training gaps in junior clerkship rotations during the COVID-19 pandemic.
2. To develop a Clinical Transition Selective Clerkship (CTSC) during Year 4.
3. To seek student feedback on organization and management of the CTSC.

Design and Methods: An online cross-sectional survey of medical students (UWI Cave Hill Campus) was conducted during June-September 2021 to identify training gaps. In response to identified gaps, the 4-week CTSC was developed to provide further opportunities to develop core competencies.

Results: Just under half of students reported the opportunity to observe (45.7%) and perform (44.5%) core skills >3 times during the medicine junior clerkship. For the surgical clerkship, 48.3% observed and 44.2% performed core skills 1–3 times. For child health, 39.6% observed and 34.8% performed skills 1-3 times. More than half of respondents (55.3%) expressed concern that they missed the usual clinical clerkship training experiences during online rotations. Three-quarters (74.5%) expressed the need to acquire additional clinical experience. The majority of students rated the following aspects of the CTSC as 'Good' or better: clarity of goals and objectives (58.3%); educational value/amount learned (56.2%); professionalism of faculty (66.7%) and other clinical staff (75%); usefulness of feedback (75%); workload challenge/level of material appropriate (70.8%); overall rating/quality of CTS (60.4%). However, the following aspects were rated as 'Poor' or "Fair': organization and coherency (77.1%); commitment of coordinators (64.6%); CTS achieved stated goals (62.5%).

Conclusion: Our study identified training gaps in junior clerkship rotations during the COVID-19 pandemic. The CTSC provided opportunities to develop clinical competencies disrupted by the pandemic.

Understanding Factors that Influence Adherence to Pharmacological Treatment among Type 2 Diabetes Mellitus Adults and The Role of Social Inequalities: A Systematized Review.

E Mandeville, N Greaves

Objective: To understand the factors that influence pharmacological adherence amongst patients of lower socio economic status who have a diagnosis of Type 2 Diabetes.

Design and Methods: A systematized review was conducted from October, 2021 to December, 2021 using the following databases: Pubmed, LILACS, Cochrane Clinical Answers, Cochrane Methodology Register, Cochrane Central Register of Controlled Trials, Cochrane Database of Systemic Reviews, CINAHL, Medline Complete and Psyc Articles. Full-text English language publications from 2006 to 2021 were chosen. The search aimed to review Caribbean and Latin American literature around the concepts of pharmacological adherence among

social inequalities and type 2 diabetes mellitus patients. One researcher extracted the data, and two researchers independently assessed the quality of the articles using pre-established eligibility criteria.

Results: Seven articles were retained based on eligibility and quality criteria. The literature showed that low socioeconomic status among patients with type 2 diabetes mellitus had a significant impact on pharmacological adherence. Several factors contributed to pharmacological adherence including lack of resources, lifestyle modification issues, access to medications, lack of family support, mental health disorders, personal problems and cultural beliefs. A multidisciplinary team approach inclusive of innovative models with community workers, healthcare providers. and health system support has been recommended. However, the nature of innovations (including the use of digital technology) has not been clearly elucidated.

Conclusion: Pharmacological adherence in patients with type 2 diabetes who are also of low socioeconomic status is influenced by multiple factors. Effective care requires a multidisciplinary approach which includes innovations. Further research is needed on the potential benefits of digital technology to improve pharmacological adherence among its population in the Caribbean .

The Use of WhatsApp messages as a Support Mechanism for Type Two Diabetes Mellitus (T2DM) in a community setting during COVID-19.

B Toppin, N Greaves

Objective: To explore the role and applicability of the social media platform WhatsApp for supporting Type II-Diabetes Mellitus self-management in a community setting.

Design and Methods: Qualitative Secondary Analysis of 155 A4 pages of single text WhatsApp messages occuring from March 2020 to August 2020 between five female patient participants and seven health care support personnel in a community-based diabetes project in Barbados. Support personnel were five trained lay persons (Health Advocates), one nutritionist and a researcher. An interpretivist philosophical paradigm informed inductive coding and thematic analysis with constant comparison. Data was managed with Atlas.ti 9.

Results: Participants perceived that the WhatsApp chat improved their dietary habits and weight-management. Additionally, the social media tool aided diabetes reversal by increasing self-management, and resilience in lock-down periods during the COVID-19 pandemic outbreak in Barbados, providing access to health care in the context of disrupted face-to-face support.

Conclusion: Diabetes self-management and reversal can be aided in the virtual setting using low-cost social media 2.0 tools such as WhatsApp. These tools may be useful in NCD management in the context of other socially isolating circumstances including non- pandemic related situations e.g., persons who live in remote rural, or alone. More research is needed to assess the usefulness and ease of implementation of such virtual interventions.

Perceptions and Experiences of Six to Sixteen-year-old School Children in Barbados on Wearing Eyeglasses.

W Jones, N Greaves, H Harewood, D Grosvenor

Objective: To explore the perceptions and experiences of school children in Barbados on eyeglasses and their use.

Design and Methods: A qualitative approach informed by an interpretivist paradigm and the philosophy of ontological relativism was used. Children from ages 6 - 16 years old in Barbados who were wearing glasses for 1 year or more were recruited from public and private paediatric eye clinics using purposeful sampling. Data were collected using semistructured, one-on-one interviews. These explored experiences associated with finding out spectacles were required, receiving glasses and being a spectacle-wearer. Data were analysed by thematic analysis with constant comparison, supported by Atlas ti 9 software.

Results: Participants described various emotions on finding out they needed to wear glasses, perceptions that glasses wearers are "smart" and beliefs that using glasses could be a cure or harm. Emerging themes included: 1) Wearing glasses affects the social perspectives and emotional health of children; 2) Beliefs about glasses and visual health.

Conclusion: Children have a stake in how their visual health is managed. Clinicians should explore the paediatric patient's emotions and beliefs about glasses when prescribing.

Reference:

CARPHA Public Heajth Agency 62nd Annual Scientific Meeting. West Indian Medical Journal Supplement West Indian Med J 2022; ol 70 (Suppl 1): 1–61

The above report was compiled by Prof Anne St John.

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SPECIAL ARTICLE

MENTAL HEALTH AND COVID-19: PREDICTIONS, IMPACTS, AND A WAY FORWARD

Dr. Kadisha Douglin
Consultant Psychiatrist
MBBS, DM Psychiatry (UWI)

Introduction

On March 11th, 2020, the World Health Organization declared the outbreak of the novel coronavirus, a global pandemic[1]. The world was thrust into panic, fear, and uncertainty. 'Stay at home' orders shifted from 2 weeks to span months, which seemed never-ending. There were waves of uncertainty coinciding with peaks in cases, access to vaccines, and tightening and relaxing of restrictions. The world has barely emerged from the sick bed of the COVID-19 pandemic with the recent declaration of "an end in sight" by the WHO[2], only to find itself in a collective "mental health crisis".

As we approach World Mental Health Day on October 10th, it is imperative that our recognition of the state of mental health in the post-pandemic era moves from the realm of annual talking points to tangible action in order to achieve "Making mental health and well-being for all a global priority"[3].

In this CME article I seek to achieve the following objectives:

1. Define mental health
2. Provide some background regarding the state of global mental health pre-pandemic vs post pandemic
3. Explore how previous pandemics have impacted mental health
4. Provide a brief overview of the impact of COVID-19 on mental health
    a. Indirect Psychosocial impacts and impacts on service provision
    b. Possible Neuropsychiatric impacts and long COVID
5. Provide WHO-supported recommendations for promoting mental health and wellbeing for all.

Defining Mental Health

Before we take a dive into exactly how the pandemic has impacted mental health across the globe, it would be worthwhile to recap on a definition of mental health.

"Mental Health is a state of wellbeing in which an individual realizes his or her own abilities, can cope with the NORMAL stresses of life, can work productively and is able to make a contribution to his or her community… Mental health is fundamental to our collective and individual ability as humans to think, emote, interact with each other, earn a living and enjoy life"[1] .

Mental health, therefore, is not merely the absence of mental illness, but is a uniquely individual continuum, with optimum functioning being an integral part of human well-being.

Many factors come together as either protective against, or increasing susceptibility to, poor mental health. These encompass the following:

- Biological factors such as genetic/epigenetic vulnerabilities, physical health, substances/medications, immune/stress response
- Psychological factors such as temperament, coping style, cognitive flexibility, belief systems, emotional awareness, and support
- Social and environmental factors such as education, socio-economic status, family dynamics, community integration, religion, and culture

Impaired mental health therefore is not resultant of one isolated event or risk factor but is multifactorial[5]. This consideration of mental health determinants is a useful vantage from which to explore mental health pre and post the COVID-19 pandemic.

The State of mental Health pre-COVID

I recall listening to mental health experts in the early months of the pandemic, who expressed concerns of "deaths of despair" and mental health crisis as loss increased, businesses dissolved, and social isolation became prolonged[6]. What concerned me then, was the

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knowledge that the world's collective mental health was already precarious:

- Between 1990 and 2013 the world saw an almost 200 million increase in the number of people living with depression and anxiety[4].
- In 2019, approximately 1 in every 8 people (almost 1 billion) was living with a mental disorder[4].
- Suicide was, and remains one of the leading causes of death worldwide amongst 15–29-year-olds [4].
- Globally, 20% of children and adolescents are living with a mental illness [4].

According to the Lancet commission on global mental health and sustainable development, the global number of disability-adjusted life-years due to mental illness increased from 80.8 million to 125.3 million between 1990 and 2019[7]. Mental disorders are among the top leading causes of burden worldwide, with 12 billion working days lost due to mental illness every year (pre-pandemic) Two of the most common mental disorders, depression, and anxiety disorders, cost the global economy US $1 trillion each year[4].

With this significant burden, access to mental health care and investment in infrastructure remained lacking. Globally countries spend less than 2% of health care budgets on mental health[8].

Mental Health and Psychosocial Impacts of Disasters, and Predictions in the Early Days of COVID-19

It is important to recognize that the pandemic was not a "normal stressor of life," but rather a disruptor in keeping with a "slow-moving disaster", leading to human, and economic losses and impacts. The existing literature regarding the impact of trauma and disaster on mental and psychosocial wellbeing is quite comprehensive. Almost every person impacted by a disaster situation will experience some form of psychological distress. According to the World Health Organization, the prevalence of depression and anxiety disorders is expected to double after crises, with people living with pre-existing severe mental illness being particularly vulnerable[9]. While normal/nonpathological stress reactions and mild mental disorders double after emergencies, these decline over time with the appropriate community, social and mental health supports in the context of a broad and inclusive mental health and psychosocial support framework[10, 11].

What happens when the disaster is prolonged, when uncertainty seems indefinite, and the disaster has real direct biological impacts? Reports early on in the pandemic suggested adverse mental health impacts on both the general public and first responders[12]. Studies showing correlations between economic recession, unemployment and rise in suicide rates, raised concerns of increased suicide rates as a consequence of the COVID-19 pandemic[6]. These predictions were particularly worrying in the first 6 months of the pandemic when prolonged lock downs led to business closures, layoffs, and in the Barbados context, closure of the tourism sector.

History Lessons: Mental Health and Previous Pandemics

Compounding the concerning predictions, were the history lessons from past pandemics suggesting significant mental health impacts:

- The number of 1st time hospitalized patients with mental disorders attributed to influenza increased by an average annual factor of 7.2 in the 6 years following the Spanish flu pandemic[13]
- Spanish Flu survivors reported: Sleep disturbances, Dizziness, Depression, "Mental distraction"[13]
- 1919-1920, physicians reported: "Nervous" symptoms in patients post influenza infection, including depression, neuropathy, neurasthenia, and visual problems[14]
- Survivors of Severe Acute Respiratory Syndrome (SARS) had increased prevalence of depression, anxiety and post-traumatic stress disorder[15]
- There was increased prevalence of adverse mental health outcomes in healthcare workers during and 6 months after the SARS outbreak was declared contained[15]
- The suicide rate increased in April 2003 in Hong Kong due to the SARS epidemic – with older adults particularly impacted[16]

Mental Health and Psychosocial Fallout of COVID – What's the Evidence?

Fast forward to present day and it appears the prognostications were at least partially correct. Bearing the social determinants of mental health in mind, one can examine the social and environmental impacts of the pandemic.

Between March and May of 2020, there were the first global restrictions on travel, school and university closures, closures of 'non-essential' businesses, and enforced physical distancing. Also, during that period, Europe and

North America saw significant deaths due to the first wave of COVID-19[17]. The first six months of the pandemic also saw a barrage of sickness, death, economic losses and public health restrictions in the media. Systemic meta-analyses supported a spike in mental health problems that coincided with that March-May 2020 period. While there was a decrease in this spike at the end of the first wave, prevalence rates of mental health problems remain higher than pre-pandemic levels[17] .According to the World Health Organization, it is estimated that the number of people living with depression and anxiety rose by 25% in 2020 due to the COVID-19 pandemic[18].

In an UNCTAD report published in June 2021, a global GDP loss of over $4 trillion for 2020 and 2021 was estimated, with developing countries particularly impacted due to vaccine inequity and slower recovery of the tourism sector[19]. However, this economic downturn did not seem to result in the predicted uptick in suicide rates[20]. While there were scattered (and often sensationalized) suicide reports in the early months of the pandemic, the first year of the pandemic revealed no net increase in suicide rates[20]. Anecdotal reports of increased presentation of suicidal ideations in emergency and mental health settings, underscore the need for data collection in the Barbados context.

While suicide data remained stable, a significant finding was the increased mortality (not suicide related) of persons living with pre-existing serious mental illness[21]. People with pre-existing serious mental illness are recognized to have an increased all-cause mortality compared to the general population, mainly due to high burden of noncommunicable diseases[21]. These individuals were found to be at increased risk of becoming infected with COVID-19 and developing severe COVID. The disruption to general and mental health care provision also negatively impacted this vulnerable group.

Gender disparities in mental health were widened by the pandemic. Prevalence of anxiety and depression was increased in females compared to males, reflective of the increased socioeconomic disruptions women faced during the pandemic[17]. Women were more likely to leave the workforce to care for children or take on the dual task of working from home while taking care of children. Globally, women are also more likely to work as caregivers (nurses, care of the elderly). In the region of the Americas where there is a high prevalence of gender-based violence[22], women faced forced quarantine/isolation with their abusers[23].

Reports also suggested younger, more active members of the population experienced greater mental health impacts, particularly heightened anxiety[17]. In the Barbados context, one cross-sectional self-report survey suggested findings in keeping with global reports – self reports of increased psychological distress and anxiety amongst younger and unemployed members of the population[24]. There is, however, need for further research in the region to determine the true magnitude of the mental health impact of the COVID-19 pandemic.

An important population impacted by the pandemic, is that of first responders and health care workers[25]. The regional report from the Americas 'HEROEs' study (The COVID-19 Health care workers study), revealed that between 15 and 22% of health care workers reported depressive symptoms and 5-15% reported suicidal ideations[25]. Systematic reviews and meta-analyses have consistently shown a high prevalence of depression, anxiety, and psychological distress in this group [12,17,25]

In addition to the impact of psychosocial disruptors during the pandemic, one must consider the direct impact, if any, of the SARS-CoV2 virus on mental health. The SARS-CoV 2 virus has impacts on multiple organ systems including the brain[28]. Studies of other coronaviruses (SARS-CoV and MERS-CoV) revealed increased incidence of depression, anxiety, and cognitive difficulties[29]. There may therefore be implications for SARS-CoV 2.One large retrospective cohort study in the USA found an increased incidence of a first psychiatric diagnosis14-90 days post COVID-19 infection[30]. While this study's design could not exclude out the role of socioeconomic factors, other studies have demonstrated brain and inflammatory marker changes in COVID-19 survivors that may be associated with increased risk of neuropsychiatric sequelae[31].

According to the CDC, 19% of adults in the USA who have had COVID-19 report symptoms of "long COVID"[32]. This prevalence seems higher in older adults and women[32]. Symptoms of post-COVID syndrome or "long COVID" include a number of neuropsychiatric symptoms including cognitive impairment, depression, anxiety, and fatigue reminiscent of symptoms described in the aftermath of the Spanish 'Flu[13]. These symptoms further suggest a direct biological impact of COVID-19 on brain and mental health[29].

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Mental Health Service Disruptions during COVID

A survey conducted by the World Health Organization between June and August 2020, revealed that critical mental health services had been disrupted or halted in 93% of countries worldwide[33]. This disruption on a background of chronic global underfunding of mental health, occurred at a time when the demand for access to mental health care was increasing[33].

In Barbados the first wave of the pandemic, with resulting curfews and business closures, saw outpatient mental health services at the general hospital scaled back and repurposing the inpatient unit in anticipation of a surge of cases[34]. Elective admissions at the psychiatric hospital were put on hold and community mental health services increased assessments and home visits in an effort to reduce admissions[34]. Psychiatrists at the general Queen Elizabeth Hospital and in the community provided telepsychiatry services to frontline workers and persons in government designated quarantine centres. After the initial relaxation of measures, mental health services in the community and at the Psychiatric hospital saw a rebound in referrals and admissions[1]. Anecdotal reports reflect WHO reports of increased demands for services in the face of limited resources and mental health funding.

The Way Forward

The pandemic has proved a thorn in an already festering sore. The biological impact, socioeconomic disruption, loss, and uncertainty of the COVID-19 pandemic have had a significant mental and psychosocial impact on a background of rising mental distress and chronic underfunding[34].

There have been silver linings:

- The pandemic has shone a spotlight on mental health that begs attention and action
- The value of a Mental Health and psychosocial support system framework has been highlighted
- The power of communities banding together has been borne out

This glimmer of hope must be fostered through collective global action. Twenty years ago, the World Health Organization highlighted the concerning state of global mental health, and a way forward, in its publication, "The World Health Report 2001: mental health – new understanding, new hope[5]. "This year, WHO has released a new report, "World Mental Health report: Transforming mental health for all." This report recognizes the advances in neuroscience research and technology that have improved global understanding of mental health.[8] It also draws attention to the WHO's 'Comprehensive mental Health Action Plan 2013-2030'.[8] This report emphasizes that mental health and wellbeing are basic human rights, and the existing status quo is untenable[8].

So, what are the recommendations for "transforming mental health for all" in the post pandemic era and beyond? When we embrace the fact that mental health is integral to our collective ability to function, we can then engage in committed action toward these 'Comprehensive mental health action plan' goals:

1. Promoting wellbeing
2. Prevention of mental disorders
3. Provision of care
4. Enhancing recovery
5. Reducing morbidity and mortality

Let me close by exploring three broad pathways to mental health transformation as outlined by the World health Organization.

The first pathway requires that mental health receives true value and commitment, at a multisectoral level, to engender meaningful positive change. This does not mean paying lip service to mental health. True value and commitment are tied to investment and tangible action toward promotion of well-being and prevention of mental health conditions and suicide[8].

The second pathway recognises that one's milieu is crucial to one's ability to cope and thrive. Transforming the social determinants of mental health requires engagement of stakeholders at all levels, from individuals and communities to employers and governments. Educational, occupational, economic, and wider community environments should foster characteristics that provide everyone with the opportunity to "achieve their full potential and make a contribution to their community"[8].

And finally, mental health care must be strengthened.[8] A glimpse into a fortified mental health care system would reveal some of the following[5]:

- Affordable, accessible mental health care for all
- Improved community-based resources
- Integration of mental health in primary health care settings

- Bolstered mental health workforce via training and recruitment

The current trajectory towards a mental health crisis, exacerbated by the COVID-19 pandemic, can be altered if countries commit to meaningful engagement now.

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CME/UPDATE

TREATMENT OF LOCALISED PROSTATE CANCER- A PRIMER

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Localized prostate cancer refers to the absence of tumour extension beyond the prostatic capsule [1]. In the assessment of these patients, risk stratification is important to identify those at greatest risk of developing aggressive prostate cancer, and as such, tailor treatment options to suit. Adequate staging should be carried out utilizing cross sectional imaging and bone scans as indicated and localized cases are categorized into very low , low risk, intermediate, high and very high risk, taken based on the Gleason score, initial PSA and T stage [2].

Based on this, options available include observation, active surveillance, radiation (external bean radiation or brachytherapy) and radical prostatectomy. The latter three are applied with curative intent. All standard treatments carry risks of adverse events that can negatively affect the short or long-term quality of life. As such, directing care to these patients must take into account not only the disease features, such as stage, grade, and volume of cancer detected, but also patient co-morbidities, life-expectancy, and of course patient preference. We believe strongly that patients should not be rushed but instead thoroughly counselled and empowered to participate in their treatment decisions.

Observation

Observation, also referred to as watchful waiting, has traditionally been directed towards men who will die with prostate cancer rather than from the disease. Observation, or watchful waiting as it is called, is typically applied to men with poor overall survival such as the elderly or those with competing mortality risks secondary to multiple comorbidities[3]. In this setting, they are monitored simply with a PSA and physical examination, stopping short of intrusive surveillance biopsies or imaging. This is done no more than once yearly, unless they become symptomatic, or symptoms are impending. If this does occur, palliative androgen deprivation therapy (ADT), in the form of injections or orchidectomy, can be initiated [2]. The goal of this strategy is not to cure but to avoid treatment related side effects in older, frail men many of whom in practical terms, ought not to have been screened or biopsied to start with.

Active Surveillance

Patients and colleagues are often surprised to learn that not all prostate cancers require immediate treatment! One under-utilized treatment modality is active surveillance. Active surveillance (AS), unlike watchful waiting is aimed towards men with pathologically insignificant disease. The latter is defined by clinical and pathological criteria and while various protocols exist, with some being slightly less stringent than others, AS is typically applied to men with Gleason 6 disease, a PSA < 10ng/ml, low clinical stage and 2 or fewer cores on a 12 core prostate biopsy. This strategy is based on the premise that low risk prostate cancer is generally an indolent, slowly progressive disease that is unlikely to cause morbidity or mortality.

The aim of AS is to defer definitive treatment with its attendant side effects until it is deemed necessary, and thus preserve sexual, urinary and bowel function [4] . It involves routine PSA and DRE's (no more than every 6 and 12 months respectively), as well as prostate biopsy and imaging when indicated [5]. The intent is curative, with treatment to be initiated if signs of disease progression occur. AS has been an answer to established concerns of over-treatment of prostate cancer, as it is found to have equivalent oncological outcomes when compared to radical treatment options [6]. The ProtecT trial followed men treated with AS, radiation and

radical prostatectomy, found that after 10 years, there was no significant difference in prostate cancer related mortality. The deaths that did occur in AS were among those that had higher risk groups (Gleason 7-10)[7] . This treatment option has the potential to prevent up to 55%–68% of patients from undergoing treatment, for at least 10 years [8]. There have been some concerns over the application of active surveillance to black men given the fact that these men trend towards more aggressive disease. More contemporary work has validated the safety of AS in this group with perhaps the one caveat being that they should be closely monitored – their follow-up protocol should be adhered to.

Radiation

Radiation for prostate cancer can be in the form of Brachytherapy or External beam radiotherapy (EBRT). Brachytherapy, meaning 'short therapy' involves the placement of radioactive seeds into the prostate, with Iodine-125 most commonly used. The procedure is carried out under anesthesia as a day case and is generally well tolerated. The theory behind brachytherapy is to deliver radiation in one sitting, with each bead having a small sphere of radiation around it which gradually dissipates over time. It is indicated for favourable intermediate risk and lower as monotherapy, and so is not suitable on its own for every patient but can also be used as a radiation boost in combination with EBRT with or without androgen deprivation therapy in higher risk disease[2].. Contraindications include rectal fistula, low urinary flow rates and prostatomegaly with bothersome lower urinary tract symptoms [9]. Suarez et al found that after 10 years, brachytherapy when compared to EBRT showed a lower risk of biochemical recurrence (29.1% vs 43.0%), but higher than that for radical prostatectomy (29.1% vs 23.8%) [10].

EBRT has several advantages over radical prostatectomy, particularly the absence of cardiovascular and pulmonary risks associated with general anaesthesia, bleeding and infection, and those specific to this procedure such as urinary incontinence. Erectile dysfunction is also a complication of EBRT but tends to occur later than when seen after radical prostatectomy. Conversely, EBRT involves a protracted treatment course, given in several fractions which can last up to 9 weeks, as well as the risk of radiation cystitis or colitis. A meta-analysis by Aydh et al found that for high risk patients, radical prostatectomy had better cancer specific mortality when compared to EBRT as monotherapy, however when multimodal radiation techniques were employed, such as EBRT and brachytherapy, combination therapy was not inferior to radical prostatectomy [11]..

Radical Prostatectomy

The aim of a radical prostatectomy is tumour eradication, with the intention of preserving pelvic organ function, in the form of urinary and sexual function, referred to as the 'trifecta' of outcomes [12]. It involves the removal of the prostate and seminal vesicle with anastomosis between the bladder and urethra [13]. It can be performed open, laparoscopic or robot assisted, with no evidence demonstrating the superiority of a particular method in relation to mortality, cancer recurrence or complications [14]. While most practitioners practice a nerve-sparing approach to radical prostatectomy, erectile dysfunction is a risk as are incontinence, rectal injuries and bladder neck contractures. If pathological review of the removed prostate reveals adverse features such as a positive margin, adjuvant EBRT may be recommended. A [15] year review post treatment for localised prostate cancer by Mazariego et al showed that after assessing all treatment options, sexual complications were most pronounced in the RP arm, but outcomes improved as time progressed [16]. Currently, in the English-speaking Caribbean open radical prostatectomies are offered in most territories with only a few practitioners offering laparoscopic procedures.

Conclusion

Despite being a prevalent malignancy, prostate cancer has a high 5-year survival irrespective of the assigned treatment. A number of options exist for radical prostatectomy and radiation reduces the risk of disease progression and metastases, however, the urinary, sexual and bowel related side effects must be taken into account [17]. Practitioners are advised to have a thorough and frank discussion about the various treatment options and how they fit THAT patient. The approach should be multidisciplinary with involvement of urologists and oncologists and psychological support services wherever possible.

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COMMENTARY

CLIMATE CHANGE: IS THE TIME TO ACT NOW?

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The threat COVID-19 poses to the Caribbean is well understood, causing deaths, illness, disrupting education of our youth and putting National economies in a tailspin. In most countries, the Governments responded by swiftly introducing a variety of ameliorating measures, such as mask mandates and vaccination requirements. The threat posed by climate change may be even more devastating than COVID-19, and even though international calls to "Act Now for Health" have been coming out of major international Climate Change conferences for some years now, the dangers are under recognised, sometimes poorly understood, and generally have not attracted any sort of vigorous response. (Sounds like what happens when many of our people are invited to take the COVID vaccinations).

If you thought the COVID pandemic was disruptive and deadly, climate change will be so much worse, so said a group of experts at the U.N. climate change conference 2021, COP26, warning about escalating climate-linked health threats including frequent severe slow-moving hurricanes and flooding. Medical systems are often being strained if not damaged by these events. There will also be a challenge of keeping accessing medical facilities in the midst of hurricanes and floods. And, as we have seen during the COVID pandemic when medical personnel are themselves affected, front-line services may not be available precisely at the time where they are most needed. Vulnerable countries such as ours need money to move medical facilities to higher ground and to train health professionals to deal with climate-linked health issues.

The Lancets Countdown's sixth annual report summarises the conclusions of researchers from 43 academic institutions and UN agencies who examined the relationship between health and climate change across five domains using more than 40 indicators [1] . Of particular concern, is that many current COVID-19 recovery plans are not compatible with the Paris Agreement, the legally binding international treaty on climate change. It is possible to respond to climate change and to recover from the COVID-19 pandemic simultaneously, and doing so is the preferable option.

We are perhaps complacent because of our small size, reflecting that we can have little impact on a much larger world. Perhaps we feel we are innocent victims, contributing miniscule quantities of greenhouse gasses that are the main drivers of global warming, and in turn the main cause of climate change, but we are affected by the extremes in rainfall – sometimes too little, sometimes too much – that affect our crops. We are affected by the extreme intense weather conditions like hurricanes, earthquakes and volcanoes that damage agriculture, infrastructure and even homes. We may not immediately be concerned about rising sea levels from melting icebergs until we take note of coastal erosion and recognise that we need to relocate to higher ground. Furthermore, since most of our income-generating tourism is centred around our coastlines, coastal erosion will also erode our income generation. And all these scenarios are associated with adverse health consequences.

Particularly in the last century, human activity has been the main driver of climate change, primarily due to the burning of fossil fluids (like gas, oil and coal) which produce heat-trapping gasses (green-house emissions). Climate change includes: intense drought, severe hurricanes, heat waves, rising sea levels, melting glaciers and warming oceans, and these can directly hurt animals, destroy human habitat and disrupts people's lives and communities. Declining water supplies have led to reduced agricultural yields in countries that already commit too much of their resources in buying unhealthy foods from outside of the region.

Climate change, together with other natural and human-made health stressors, influences human health and

COMMENTARY... cont'd

disease in numerous ways. Some existing health threats will intensify and new health threats will emerge. Not everyone is equally at risk. Important considerations include age, economic resources, and location. The health effects of these disruptions include: increased respiratory and cardiovascular diseases, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and water-borne illnesses and other infectious diseases, and threats to mental health.

Mental illness is one of the major causalties of climate change, and extreme weather events can affect mental health in several ways. Following disasters, mental health problems increase, both among people with no history of mental illness and those with pre-existing mental illness. These reactions may be short-lived or, in some cases, long-lasting. For example, research has demonstrated high levels of anxiety and post-traumatic stress disorder among people affected by Hurricane Katrina, and similar observations have followed floods and heat waves. All of these events are increasingly fuelled by climate change. Other health consequences of intensely stressful exposures also affect pregnant woman and this can have long lasting effects on the baby after birth.

In addition, some patients with mental illness are especially susceptible to heat, which seems to aggravate their mental illness. Suicide rates vary with weather, rising with high temperatures, suggesting potential impacts from climate change on depression and some other mental illnesses. Dementia is a risk factor for hospitalisation and death during heat waves. Patients with severe mental illness, such as schizophrenia, are at risk during hot weather because their medications may interfere with temperature regulation or even directly cause hyperthermia.

Extreme heat events remain a cause of preventable death. Combined with an ageing population, extreme heat events are projected to increase the vulnerability to heat-related health impacts in the future. Heat waves are also associated with increased hospital admissions for cardiovascular, kidney and respiratory disorders. Deaths result from heat stroke and related conditions, but also from cardiovascular disease, respiratory disease, and cerebrovascular diseases - conditions that we already have too much of.

Globally, climate change is expected to threaten food production and certain aspects of food quality, as well as food prices and distribution systems. Many crop yields are predicted to decline because of the combined effects of changes in rainfall, severe weather events, and increasing competition from weeds and pests (like monkeys) on crop plants. Livestock and fish production are also projected to decline. Prices are expected to rise in response to declining food production and associated trends such as increasingly expensive petroleum (used for agricultural inputs such as pesticides and fertilisers). Right now, more than half of the small islands developing states (SIDS) import over 80% of what we eat and a lot of this is ultra-processed, high in sugar, salt and fats.

Any increase in global warming will primarily adversely affect human health. Research shows that heat-related morbidity and mortality are projected to increase at 1.5 °C of warming and increase further at 2 °C or 3 °C. Ground-level ozone, a potent air pollutant, will increase when global warming exceeds 2 °C, resulting in a higher ozone-related mortality burden. As the climate changes, the world's population is also growing older. Warming has continued to grow as a threat despite widespread scientific documentation of its severity and devastating outcomes if unchecked by massive changes in human societal behaviour. Our global political processes have yet to be successfully mobilised to even pause, much less reverse, this threat. Population ageing will substantially amplify the projected mortality burden of temperature and air pollution under a warming climate.

Whether we choose to acknowledge it or not, climate change is already impacting health in a myriad of ways, including by leading to death and illness from increasingly frequent extreme weather events, such as heat waves, storms and floods, the disruption of food systems, increases in zoonoses and food-, water- and vector-borne diseases, and mental health issues. Furthermore, climate change is undermining many of the social determinants for good health, such as livelihoods, equality and access to health care and social support structures. These climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged, including women, children, ethnic minorities, poor communities, migrants or displaced persons, older populations, and those with underlying health conditions. We have "all of the above".

Suggested roles for health care professionals include:

- Healthcare professionals should be well aware of the dangers of climate change, and should utilise any opportunity available to educate themselves, their patients and their communities.

- When counselling patients, go beyond traditional health advice, such as regularly exercising and reducing sugar and salt intake. "They should also say, 'Reduce your exposure to air pollution, reduce your car journeys, reduce your consumption of red meat.'' (Animal agriculture is a leading cause of green-house emissions). A diet rich in plant-based foods and with fewer animal-source foods confers both improved health and environmental benefits.

- On an individual level, individuals should be made aware of the effects of climate change on health and that improving climate is a priority. They can be smart about personal choices, and perhaps 'nudge' governments to convert talk to action.

- To strongly suggest that persons consider options for securing at least some of their food: a monkey and praedial larceny resistant back yard garden is a good place to start.

- To reinforce the importance of protection against mosquitoes: while malaria is confined at a few regions, we have already seen waves of dengue, Zika and Chikungunya.

- Physicians should suggest that each family develop an emergency plan, and have an emergency kit. As with any plan, testing, refining, and re-testing offers the best opportunity for successful implementation when a crisis does arise. Each family and each community should develop a long-term sustainable for healthy living, anticipating the challenges ahead of us.

While no one is safe from these risks, the people whose health is being harmed first and worst by the climate crisis are the people who contribute least to its causes, and who are least able to protect themselves and their families against it - people in low-income and disadvantaged countries and communities. Ultimately, survival may turn out to be each man (woman/child) for himself/herself. Unless, of course, our trillionaire relative purchases tickets on a rocket so our family can emigrate to another planet.

References

1. Romello M, McGushin A, et al: The 2021 report of the Lancet Countdown on health and Climate change: code red for a healthy future. The Lancet Vol 398 Issue 10311, p 1619, Oct 2021

Dr Colin Alert is a part-time Lecturer in Family Medicine with the UWI,Faculty of Medical Sciences, Cave Hill Campus and operates a private practice.

SPECIAL AWARD

CITATION
MR SELWYN FERDINAND
MB.BS (UWI), FRCS Ed. FCC

By **Dr Natasha Sobers**
MBBS,MPH,PhD

Dear Fellow practicioners
It is with great pleasure that I present to you the citation for Mr. Selwyn Ferdinand a stalwart of excellence in the surgical landscape of Barbados for the past 40 years, and with 30 of those years as a consultant surgeon at the Queen Elizabeth Hospital. He is a skillful practitioner and surgical innovator, who is committed to service and teaching from primary to tertiary care. We acknowledge his instrumental work in revitalizing both the trade union and medical association mandates of the Barbados Association of Medical Practitioners (BAMP) as a council member for over 10 years. He has been the BAMP representative on Pharmacy and Medical Council for an additional 8 years, and committed member for the profession, for the past 40 years. He has served BAMP as President, First vice president, Second Vice President and Floor member. Today Sir, the Barbados Association of Medical Practitioners pays homage to his stellar contribution.

Mr Ferdinand- The Surgeon

Mr. Ferdinand once reflected that growing up, he was good with his hands, he loved to fix things and thus as soon as he was exposed to surgery in medical school he knew he had found his calling. In the field of surgery, he is best known for his work on breast cancer, colorectal disease, laparoscopic procedures and wound care.

Mr Ferdinand together with Dr Ramesh, organized and introduced Laparoscopic Surgery to the Queen Elizabeth Hospital in 1996. He was a pioneer not just for Barbados, but also the region, as a Member of the Organizing Committee of First Caribbean Minimal Access Workshop.

His work with the diabetic foot care is also legendary. He has served as chairman of the Organizing Committee of First Caribbean Workshop on Diabetic Foot and Wound Care and was a member of Ministerial Committee to address Diabetic Foot Care in Barbados. He worked not only at the policy level, but he was also committed to training doctors and nurses within the hospital and polyclinic system on proper wound care. He set high standards for himself and shared these standards with others.

Mr-Ferdinand - The academic

In academia we rely on Mr. Ferdinand's real-world experience and his honesty in assessment and critique. He was a Member of the Advisory Committee of The Barbados National Cancer Study in the early 2000s. His publications and presentations on Breast cancer are numerous.

The Barbados National Registry for non-communicable diseases continues to rely on his insight to determine if the numbers assessed align with the reality seen in the operating room. An honest, outspoken assessment from someone who understands health care and values data is rare. The BNR appreciated his insight.

His outstanding mentorship is exemplified in these reflections by Dr. Margaret O'Shea:

> *"I have worked with Mr Ferdinand as a medical student/ surgical resident/ consultant colleague and now as a*

lecturer in surgery. For Mr Ferdinand, a high standard of patient care has always been paramount. As my teacher, I would say Mr Ferdinand was forthright in his criticisms but it was never personal as he would be equally forthright in his praise when a job was well done. He was strict with his standards, which he would not compromise, one of his favourite sayings on ward rounds was "the tail does not wag the dog". His standard of care was not compromised even when pressured from those who one might consider in "higher office" .

As a consultant colleague he shared his wisdom and experience when asked about patients with complicated issues and later as Head of Department I could always rely on Mr Ferdinand to be supportive of positive endeavours that would advance the department even when our opinions differed.

After becoming a Lecturer at the University of the West Indies, I valued his commitment to teaching, evaluating and mentoring students. The University could not function without committed Senior Associate Lecturers like Mr Ferdinand. I am pleased that he has assured me this commitment will continue."

Mr. Ferdinand- The personal touch

With all his National and Regional service, he still found time to provide advice that led to personal development of those around him. During my first week of internship, Mr. Ferdinand asked me and fellow interns to join him at the nurses' desk. We thought he intended to discuss surgery but he really wanted to give us financial advice on importance of saving from our first salary payment. He told about the need to get a retirement plan, health and life insurance.

Regarding his commitment to the personable, Dr. O'Shea also said: "I appreciated that he shared family stories with us on ward rounds, about his joy when he could make breakfast for his children and more recently telling us about the happiness he feels when he is with his grandchildren. He was never too "macho" to show the human side of this all-consuming profession."

In honour of his surgical acumen, passion and innovation the Barbados Association of Medical Practitioners salutes Mr. Selwyn Ferdinand. We appreciate his significant contribution to the mentorship and training of generations of medical and surgical students, interns, residents and consultants and for his substantial impact on the medical landscape of Barbados.

The above citation was read by Dr Natasha Sobers, Senior Lecturer at the George Alleyne Chronic Disease Research Centre at the BAMP Annual General Meeting, June 11, 2022 at the 3Ws Pavilion, Cave Hill Campus, UWI. and a member of the BAMP Executive Committee.

CASE REPORT

THE CASE OF THE TEENAGE STATUE

Dr Gabrielle Scantlebury
MB. BS. DM (paediatrics) UWI.

T.PF, a 13- year- old black female with known intellectual disability, was assessed as having attention deficit hyperactivity disorder in September 2021 and was commenced on methylphenidate. In October 2021 the she was noted to develop insomnia and strange behaviours. As a result of these symptoms the methylphenidate was discontinued, but the insomnia and strange behaviour worsened. She was taken to a psychiatrist and was prescribed the following over a two-week period: flupentixol, clonazepam, alprazolam, procyclidine, and risperidone. Despite these interventions she showed no signs of improvement and eventually became anorexic as behaviours worsened. In late October 2021 she was admitted to the psychiatric hospital after being diagnosed with having a brief psychotic disorder.

By the third day following admission, she was noted to be febrile, hypertensive and tachycardic and was referred to the Accident and Emergency department for assessment. On initial assessment, she was noted to be catatonic with a GCS of 6-8, rigid with diminished reflexes and unable to move any muscle groups. Pupils were equal and reactive, and she was aphasic but appeared to understand instructions communicated to her. She was also hyperthermic, hypertensive and tachycardic. The rest of her physical examination was non-contributary. She was assessed as having neuroleptic malignant syndrome (NMS) and was admitted to the Paediatric Intensive Care Unit (PICU) of the Queen Elizabeth Hospital.

Investigations

Initial full blood count revealed a white blood cell count of 14,600 and biochemistry was significant for a prerenal azotaemia with a blood urea nitrogen of 9.2 mmol/L, a creatinine kinase of 25,193 IU/L and deranged liver function with an AST of 447 IU/L and ALT of 265 IU/L. Microbiological cultures were negative.

Management

She was diagnosed as having neuroleptic malignant syndrome with rhabdomyolysis. Her management included hyper-hydration for treatment of the rhabdomyolysis, with normalization of her renal function, muscle and liver enzymes during her admission. The rigidity, catatonia, tachycardia and hyperthermia resolved with the administration of bromocriptine and lorazepam. After 13 days of PICU care, she was discharged to the psychiatric hospital for continued management of the underlying psychosis.

Discussion

NMS is not commonly observed in the paediatric population but when it does occur it can be life threatening. It is a neurologic emergency characterised by altered mental status, rigidity, fever and autonomic dysfunction, and has been traditionally linked to first generation anti-psychotics, but can occur with all classes of these drugs. The pathogenesis is currently unknown, but is thought to be linked with dopamine 2 receptor antagonism.

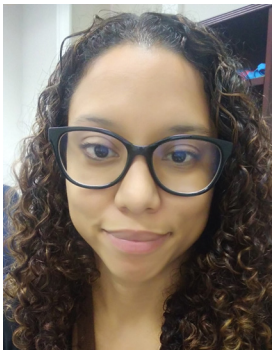
Management is supportive with immediate discontinuation of the offending medication. The aim treatment is to manage hyperthermia and the rigidity and to prevent end organ damage especially renal and respiratory compromise. Symptoms usually resolve in about 2 weeks.

Conclusion and lessons learnt

When commencing children on antipsychotics. It should be done cautiously and patients should be monitored closely especially if multiple drugs are involved. Caregivers and patients should be counselled on the signs and symptoms of NMS and the need to seek medical attention if it occurs.

Dr Gabrielle Scantlebury is a senior registrar in the Department of Paediatrics,Quieen Elizabeth Hospital in Barbados.

A TALE OF TWO EVENTS OF "ALTERED MENTAL STATUS" AND THE LESSONS TO BE LEARNT



Dr Arianne Harvey
MB. BS (Hons) (UWI) MD
Consultant Internal medicine

Synopsis

A 92-year-old woman was referred for acute altered mental status 3 weeks after being discharged from the hospital.

She had been taken to the hospital the previous month by her children, after she was found her down at home after an unwitnessed fall. She was discovered on the floor, with left sided weakness and slurred speech, was disoriented. She couldn't provide any history and was brought the Accident and Emergency Department where she was assessed as "Altered mental status, query cause?".

On assessment there, she had normal vital signs but was noted to have GCS 10/15 ($E_3V_4M_3$) and left-sided weakness.

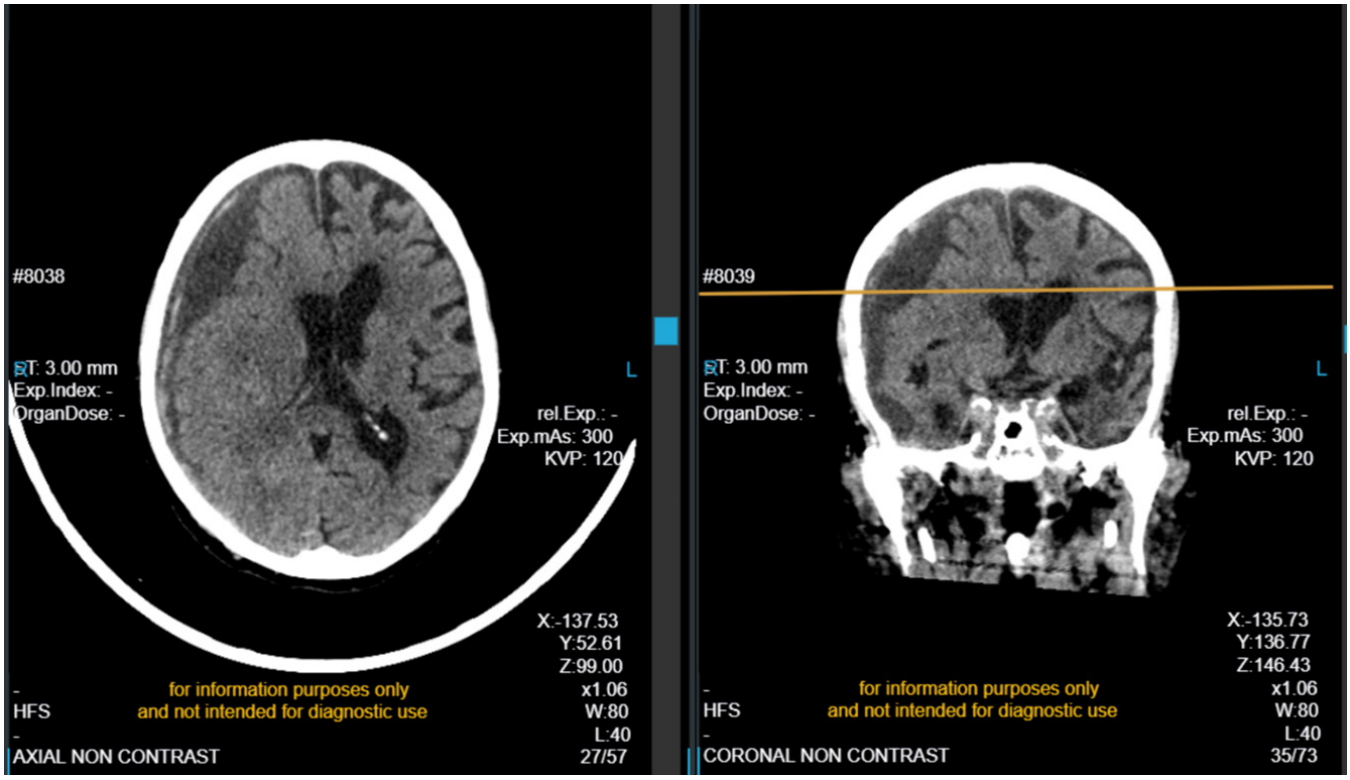


Figure 1. CT Brain demonstrating right subdural hematoma with midline shift (with permission)

CASE REPORT... cont'd

She was referred to the Neurosurgery service who deemed her a high surgical risk due to comorbid frailty, hypertensive heart disease and moderate dementia and recommended conservative management. She was subsequently discharged into care at home which was the preference of her family.

In the following weeks, she had gradual improvement to a new baseline of pleasant alertness but disoriented and was bed-bound and required assistance with all Activities of Daily Living (ADLs). She was receiving physiotherapy for mobility, had clearer speech, and was tolerating a soft diet well, until the day of referral.

That morning, she was witnessed to have an abrupt drop in responsiveness while having breakfast – characterized by choking sound and dribbling of food, while noticed by nurses to have twisting of the face. A visiting physician service was called and found her to be obtunded and in respiratory distress with abnormally patterned breathing.

Her temperature was 36.7 deg Celsius, blood pressure 168/ 90mmHg, heart rate 72 beats/min., respiratory rate 14- 28 breaths/ min Pulse oximetry was 86% on room air.

She was referred for admission as "Altered mental status, query cause?"

My immediate presumptive diagnosis was expansion of the right subdural hematoma, now with terminal compressive intracranial hypertension and my expectation was to meet a patient with a very poor prognosis.

On examination the patient was a frail, elderly woman who was obtunded and demonstrating cyclical episodes of progressive bradypnea to apneic pause, followed by resumption of tachypnea – classic Cheyne- Stokes respirations.

Her Glasgow Coma Scale was 6/15 ($E_1V_1M_4$) with bilaterally constricted 1mm pupils with sluggish response. Her motor examination is demonstrated in the diagram below. (See figure 2.)

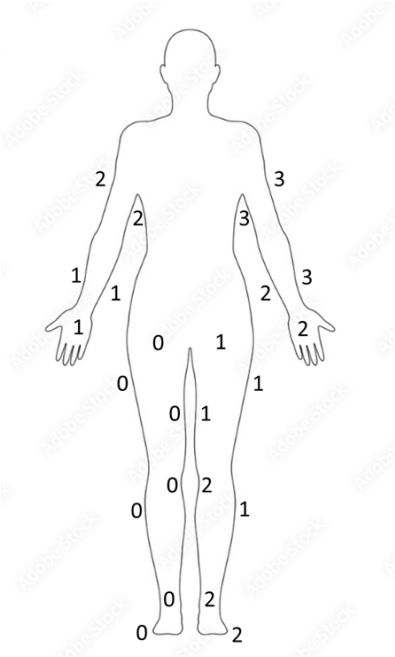


Figure 2. Grade power documentation

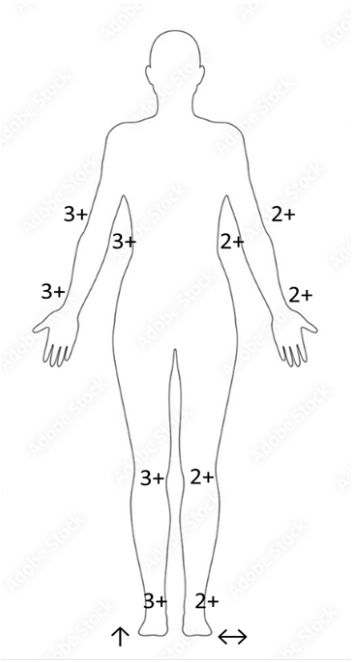


Figure 3. Reflexes documentation

Cardiovascular, respiratory, abdominal and extremity examinations were unremarkable.

I met with the family and explained that her prognosis was poor and that her breathing pattern suggested that her brain was severely compromised. Given the previous history of recent intracranial hemorrhage, progression of the same, was the most likely culprit and supportive care was the management of choice. They accepted this on the background of expectations that were set by the Neurosurgical team, in explaining the features of progression from the AED visit.

However, I felt unsettled about features of the clinical examination that did not match up with my presumptive diagnosis.

Right subdural hematoma with mass effect would:

- Impair right oculomotor nerve motor branches causing unopposed superior oblique action: "down and out" gaze palsy as well as parasympathetic branches running on the surface of the optic tract, resulting in unopposed sympathetic pupillary effect: "blown pupil".
- Impair the right cortex causing contralateral left upper motor neuron paresis

Conversely:

- Fixed constricted "pinpoint" pupils and depressed level of consciousness are the hallmark of pathology in the Pons.
- Additionally, the patient's right-sided hyperreflexia and presence of a right up-going plantar response are in keeping with pathology on the left.

Could there be an **alternate diagnosis** of a lesion in the left Pons? A repeat CT scan of the brain was requested. .

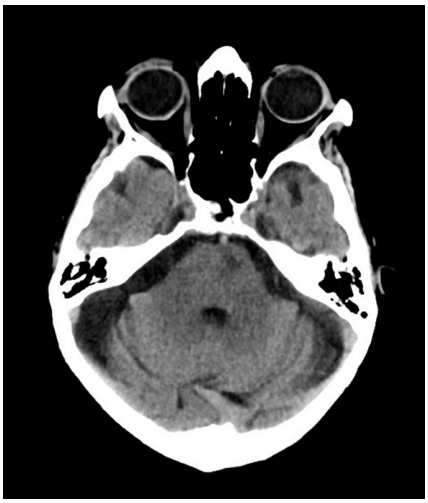


Figure 4. CT brain demonstrating left pontine infarct (with permission)

Case outcome

The patient had impressive spontaneous recovery over the next 24 to 48 hours, characterized by normalization of her respiratory pattern and increased of level of alertness to GCS of 14/ 15 ($E_4V_4M_6$). She was disoriented but able to communicate intermittently, was confined to bed , but followed simple commands and could tolerate soft diet.

She was discharged home with a fair prognosis.

My **final diagnosis** was "Altered mental status secondary to acute left pontine infarct, on background of recent, resolving right subdural hematoma."

This case is instructive for the following dictum :Trust your clinical examination enough to question the presumptive diagnosis if the clinical picture does not make sense.

Dr Arianne Harvey is an American Board Certified Consultant Internist, a Lecturer in the Faculty of Medical Sciences, UWI Cave Hill Campus, and Associate Honorary Consultant in the Department of Medicine at the Queen Elizabeth Hospital in Barbados.

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Instructions To Authors

The BAMP Journal is a publication of the Barbados Association of Medical Practitioners (BAMP). It is now effectively approaching its fifth decade of publication, having replaced the initial Newsletter of the Association, whose publication commenced in 1976.

The Editor is assisted by members of an Editorial Committee, chaired by the Public Relations Officer of BAMP Council, and is comprised of a cross section of BAMP membership, from Professor Emeritus to medical resident.

There is also an Advisory Board of seven senior members of the profession and since the beginning of 2011, with the publication of the Journal, submitted papers are peer reviewed, usually by members of the Advisory Board, or other local specialists in the relevant area. Expansion of the Advisory Board and of our reviewers to include international experts is planned.

Manuscripts should be clear, concise, accurate, and where appropriate, evidence-based, but written, in the words of the Royal College of Physicians, "with a style that retains the warmth, excitement and colour of clinical and medical sciences". Content may range from letters to the editor and clinical case reports to short Commentary articles, clinical or epidemiological studies, CME review articles or historical articles. Good items of medical humour are accepted, and quality photographs or paintings may be submitted to adorn the cover, which will have the new, dramatic masthead above a photograph or painting. Historic photos, are welcome.

Authors are asked to indicate with their submission any competing interest, including any funding for a study. They are asked to submit in Word, to edit their work carefully, and to provide full name and qualifications, address (email address optional), a word count, a portrait photograph.

References should be indicated in the text with an Arabic numeral in superscript and not bracketed e.g.[1] or [6,7,] numbered in order of appearance and listed at the end, using the style of "Uniform Requirements" in the New England Journal of Medicine and as referenced here: (New Engl J Med 1997; 336: 309-15).

They should give the names of up to four authors. If more than four, they should give the first three followed by et al. The title should be followed by the journal title (abbreviated as in Index Medicus), year of publication, volume number, first and last pages. References to books should give the names of authors (&/or editors), title, place of publication and publisher, and year of publication.

References should be not more than 10 in number.

Other examples, taken from the instructions in the Journal of the Royal College of Physicians, are:

1. Abbasi K, Smith R. No more free lunches. BMJ 2003;326:1155–6.

2. Hewitt P. Trust, assurance and safety – the regulation of health professionals in the 21st century. London: Stationery Office, 2007. www.officialdocuments.gov.uk/document/cm70/7013/7013.pdf.

Accuracy of references is the responsibility of the author.

Photographs and illustrations should be submitted as separate attachments and not embedded in the text. Submission of an article implies that it represents original work or writing and is not submitted elsewhere. Relevant articles of interest that have been published elsewhere may be accepted if clearance is obtained from the first journal and republication is stated, or may be abstracted for airing in the BAMP Journal, with appropriate reference.

Articles, letters and all items should be submitted to BAMP Office (info@bamp.org.bb).

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