

## MEDLARS BIBLIOGRAPHY

### PUBLICATIONS OF RELEVANCE TO PAPUA NEW GUINEA AND MELANESIA

#### Bibliographic Citation List generated from MEDLARS

- 1 **Aithal V, Aithal S, Pulotu L.**  
Otitis media with effusion in children: an audiological case series study.  
*PNG Med J* 1995 Jun;38(2):79-94.  
Otitis media with effusion (OME) was studied in detail in 100 children seen at the Ear, Nose and Throat (ENT) Clinic of Port Moresby General Hospital (PMGH) between June 1992 and June 1994. More males were examined than females. The majority of patients were from the National Capital District and Central Province. Pure-tone and impedance audiometry were performed to assess the type, amount and pattern of hearing loss. A characteristic audiogram for OME with improved air conduction (AC) and decreased bone conduction (BC) hearing at 2 KHz and AC loss at both low and high frequencies was established. Bilateral myringotomy and grommet insertion was performed in 30 of these children. Significant improvement in hearing threshold at all frequencies was found, indicating hearing success with surgery. Otitis media with effusion is a disease of considerable public health importance and there is a need to increase public and professional awareness of it in Papua New Guinea.
- 2 **Allen JS, Johnson FYA.**  
Eye movements and schizophrenia in Papua New Guinea: qualitative analyses with case histories.  
*PNG Med J* 1995 Jun;38(2):106-126.  
Smooth pursuit eye movement dysfunction is a psychophysiological and genetic marker for schizophrenia seen in 50-80% of patients and in about 40% of their first-degree relatives. In this study, we qualitatively assessed the smooth pursuit eye movements of 33 psychiatric patients (including 32 diagnosed with schizophrenia) and 30 control subjects in the Port Moresby area of Papua New Guinea. Brief case histories of each patient were also reviewed. Using a conservative estimate of smooth pursuit dysfunction, we found that 42% of the psychiatric patients had the marker, compared to 10% of the controls. Specific eye movement abnormalities were also much more common among the patients. A patient who had previously 'run amok' and another who was a cargo cultist had smooth pursuit dysfunction; a patient whose psychotic symptoms may have been due to cerebral malaria did not have the marker. Highland and coastal patients were similar in their expression of the marker. This study, the first of its kind done outside of large-scale, urbanized societies, provides further evidence for a common biological basis for schizophrenia in biologically and culturally diverse populations worldwide.
- 3 **Al-Yaman F, Genton B, Taraika J, Alpers MP.**  
Naturally acquired cellular immune responses to the synthetic malarial peptide SPf66 in children in Papua New Guinea.  
*Trans R Soc Trop Med Hyg* 1997 Nov-Dec;91(6):709-712.  
A prospective longitudinal study to examine the relationship between cellular immune responses to the synthetic malarial peptide SPf66 and malaria infection and morbidity was carried out in 187 children aged 0.5-15 years in the Wosera area of Papua New Guinea. Cellular responses were assessed by proliferation and stimulation of cytokines representing the Th1 and Th2 cell subsets - interferon gamma [IFN gamma] and interleukin-4 [IL-4]. Most children (66%) did not respond to SPf66 by any measure. Among the responders, the highest response was obtained for IL-4 (19%) followed by IFN gamma (10%), and the least for proliferation (5%). Analyses of the relation of T-cell response to malaria infection showed that the IFN gamma response to SPf66 was positively correlated with parasite density ( $r = 0.27$ ,  $P = 0.001$ ). There was no association between the cellular response to SPf66 and concurrent or subsequent malaria morbidity, whichever clinical definition was used. Thus none of these cellular immune responses predicted efficacy of SPf66 in this highly endemic area.
- 4 **Al-Yaman F, Genton B, Mokela D, Narara A, Raiko A, Alpers MP.**  
Resistance of *Plasmodium falciparum* malaria to amodiaquine, chloroquine and quinine in the Madang Province of Papua New Guinea, 1990-1993.  
*PNG Med J* 1996 Mar;39(1):16-22.  
The in vivo response of *Plasmodium falciparum* parasites to amodiaquine or chloroquine was assessed in children with symptomatic malaria attending different health facilities in the Madang area. Among the 27 subjects who were completely followed up, 4 (15%) were infected with parasites fully susceptible and 23 (85%) with parasites exhibiting some degree of resistance. Out of the latter group, 52% were of RI level, 26% RII and 22% RIII. 14 subjects out of 42 (33%) failed to clear their parasitaemia by day 7 and 92 out of 134 (69%) had persistent or recrudescing parasitaemia at day 21. The level of in vivo resistance was similar for amodiaquine and chloroquine. 86% of the isolates tested in vitro showed resistance to amodiaquine, 86% to chloroquine and 7% to quinine. In ten years the prevalence of resistant isolates in vivo has increased from 47% to 85%. Of more concern is the shift from RI level of resistance to RII and RIII: the proportion of resistant strains that were RI dropped from 90% to 52% over the ten-year

period. To determine if the standard antimalarial regimens are still appropriate, there is a need not only to assess the level of parasite resistance but also the prevalence of treatment failure in different parts of Papua New Guinea.

5 **Ashwell HE, Freeman P.**

The clinical competency of community health workers in the Eastern Highlands Province of Papua New Guinea.

*PNG Med J* 1995 Sep;38(3):198-207.

A case study of the clinical competency of community health workers employed in the Eastern Highlands Province of Papua New Guinea was conducted in March 1993. Of the 79 who graduated from the Onamuga Community Health Worker Training School between 1989 and 1992, only 24 were currently employed in the province. Current knowledge and clinical competency were compared with results on completion of basic community health worker training. Results showed that 22 of the 24 maintained their knowledge competency, and 15 maintained clinical competency. It was found that those community health workers (CHWs) employed at a health subcentre use 40% to 50% of their skills, whilst those at a district health centre or provincial hospital use only 20% to 30% of their skills. Only 8% of the CHWs studied used all the skills obtained in their basic training. This study indicates that the CHW is being viewed by some health managers as a replacement for the nurse aide. If CHWs' skills are to be maintained, certainly good supervision, inservice training and adequate logistic support are needed, but so also is a change in management thinking. The CHW has been trained specifically to improve the access to essential primary health care services of people living in rural areas, especially in preventive and maternal and child health care. If in practice the CHW is not given the opportunity to practise and hence maintain these skills, the whole logic of the CHW training scheme will need to be reexamined.

6 **Beare N, Watts J.**

Ten cases of bush thoracotomy in Enga Province, Papua New Guinea.

*PNG Med J* 1995 Sep;38(3):222-225.

Bush thoracotomy is the traditional practice of incising the chest wall into the pleural space in an attempt to relieve chest pain. The procedure is practised by village people in Enga Province in the highlands of Papua New Guinea and causes considerable morbidity. The beliefs on which it is based are discussed, and the methods employed described. Ten cases presenting after bush thoracotomy are documented, and one case of bush laparotomy noted. A way of reducing the morbidity from this practice is suggested.

7 **Beracochea E.**

Audit of death certificates.

*PNG Med J* 1995 Sep;38(3):191-197.

Information on the number and causes of death is one of the basic components of a country's health information system. Data are usually

derived from death certificates and health facility discharge summaries. There are usually several causes of error in the routine collection of this information. A criteria audit of death certificates is presented to assess these sources of error in Papua New Guinea. This procedure involved the systematic and critical analysis of hospital mortality as reported in death certificates. The audit is simple, cheap and useful for monitoring the quality of the mortality information which will be used in health planning and management. Quality criteria are defined and the completeness and relevance of the data audited are discussed. Recommendations for the improvement of the health information system are made.

8 **Brown N.**

How should very low birthweight babies best be managed in Papua New Guinea?

*PNG Med J* 1996 Mar;39(1):12-15.

Short-term outcome in very low birthweight babies has never been closely examined in Papua New Guinea. A cohort of neonates born over a year at Port Moresby General Hospital was followed from birth to death or discharge. Intrauterine growth retardation was an important contributor to low birthweight. Simple, inexpensive care resulted in respectable survival figures. Improving antenatal surveillance will have much more impact in reducing mortality in this group in the future than trying to emulate sophisticated and costly western neonatal care.

9 **Clegg A.**

The role of the laboratory in the diagnosis and management of typhoid fever.

*PNG Med J* 1995 Dec;38(4):315-319.

In typhoid-endemic areas the results obtained from the laboratory are important in confirming the clinical diagnosis of typhoid and may also contribute to decisions made on the management and treatment of typhoid cases. Isolation of *Salmonella typhi* remains the gold standard, with culture from bone marrow aspirate or a combination of specimens from other body sites resulting in the greatest sensitivity. Antibody detection techniques may still provide valuable information, but only if the results are interpreted in the context of the background antibody levels in the local population. None of the available antigen detection techniques have been consistently demonstrated to be of diagnostic value and a recently developed polymerase chain reaction (PCR) for the detection of *Salmonella typhi* has yet to undergo a full-scale clinical evaluation. The initial identification of chronic typhoid carriers relies upon the detection of elevated Vi capsular antibody levels, but seeking out chronic carriers will be of limited value in controlling the spread of typhoid in areas where transmission is principally mediated by convalescent excretors. Whilst resistance of *Salmonella typhi* to antibiotics has emerged as an increasing problem in some areas of the world, it is still uncommon in isolates from Papua New Guinea. However, monitoring of antibiotic susceptibility patterns will ensure that

signs of developing resistance are detected early and that the appropriate action is taken.

- 10 **Corwin AL, Simanjuntak CH, Ingkokusumo G, Sukri N, Larasati RP, Subianto B, Muslim HZ, Burni E, Laras K, Putri MP, Hayes C, Cox N.** Impact of epidemic influenza-A-like acute respiratory illness in a remote jungle highland population in Irian Jaya, Indonesia. *Clin Infect Dis* 1998 Apr;26(4):880-888.
- A suspected epidemic of unknown etiology was investigated in April/May 1996 in the remote jungle highlands of easternmost Indonesia. Trend analysis demonstrates the area-wide occurrence of a major respiratory infection outbreak in November 1995 through February 1996. The monthly mean rate of respiratory infection episodes for the peak outbreak months (2,477 episodes/100,000 persons) was significantly higher ( $P < .0001$ ) than for the 34 months leading up to the outbreak (109 episodes/100,000 persons). Notable were the high attack rates, particularly among adults: 202 episodes/1,000 persons aged 20-50 years in one community. Excess morbidity attributed to the outbreak was an estimated 4,338 episodes. The overall case-fatality rate was 15.1% of outbreak cases. Laboratory evidence confirmed the circulation of influenza A/Taiwan/1/86-like viruses in the study population, and high hemagglutination inhibition titer responses were indicative of recent infections. Historical documents from neighboring Papua New Guinea highlight the role of influenza A virus in repeated area outbreaks.
- 11 **Danaya RT.** Childhood disabilities in Papua New Guinea. *PNG Med J* 1995 Sep;38(3):159-162.
- 12 **Dyke T, Keake G.** The St John Ambulance Service in Port Moresby: a ten-year review, 1984-1993. *PNG Med J* 1996 Jun;39(2):105-110.
- The National Capital District (NCD) is unique within Papua New Guinea in having a professional ambulance service which provides emergency care during transfer to hospital. This service has been run by St John Ambulance, who have maintained records of their work during their first ten years of operation. To review the operation of the service and to consider its potential for other parts of Papua New Guinea these records were transferred to a database and analyzed. The results of this analysis, together with relevant background, are presented and some of the issues which emerge are discussed. There have been heavy demands on the ambulance service to provide a taxi service for transferring patients between health facilities. Cancelled calls have also been a heavy drain on the service. Pregnancy-related requests for transport, including home deliveries, constitute the major group of emergency calls. Requests for transfer of patients with an acute medical or surgical condition requiring skilled attention provide an important part of the nonobstetrical work of the service, though this group makes up only 10% of the total number of requests. Trauma contributed 26% of the nonobstetrical emergency work of the service. The rate of requests for the population of the NCD has decreased and it is suggested that this is due to greater access to private vehicles rather than a decrease in demand for emergency transport. It is apparent that a skilled ambulance service cannot be provided cheaply, although for 1993 at 15 kina per request, or 30 kina if only the emergency requests are considered, the service is clearly efficient. Providing a similar service to other parts of Papua New Guinea with lower population densities and less sealed road would be very much more expensive. It is unlikely that the health services could approximate a similar degree of cost-efficiency to that of St John.
- 13 **Erasmus RT, Murthy DP, Ogunbanjo BO.** Basics of molecular biology and its applications: I. Molecular biology in medicine: basic concepts. *PNG Med J* 1996 Mar;39(1):56-66.
- Medicine has, in recent years, incorporated wave after wave of new scientific discoveries and technologies. Molecular medicine is one of these technologies and shows a dramatic example of the impact of advances in basic science. Advances in molecular biology have revolutionized daily clinical practice, particularly in developed countries, such that practitioners who received their medical education decades ago now need to adapt to this new discipline. While molecular medicine may not be a priority health issue in developing countries such as Papua New Guinea, it is equally important to ensure that the basic principles of knowledge and understanding of what goes on in that field form part of today's teaching of all practitioners of medicine and allied health workers. The three papers in this series aim to present molecular biology and its medical applications in as simple and lucid a manner as possible so that its scientific basis and principles as well as its potential for diagnosis and management of diseases are well appreciated.
- 14 **Erasmus RT, Murthy DP, Ogunbanjo BO.** Basis of molecular biology and its applications: II. An outline of common laboratory techniques used in molecular biology. *PNG Med J* 1996 Jun;39(2):129-134.
- 15 **Flew SJ, Paika RL.** Health and major resource developments in Papua New Guinea: pot of gold or can of worms at the end of the rainbow? *PNG Med J* 1996 Mar;39(1):1-5.
- 16 **Freeman P, Beracochea E, Edwards K, Dickson R.** The clinical diagnosis and treatment of important childhood diseases in rural Papua New Guinea. *PNG Med J* 1995 Jun;38(2):95-105.
- This study used multiple standardized instruments to evaluate the quality of the clinical management of the common childhood diseases in rural Papua New Guinea. The findings indicate major inadequacies in the quality of history taking,

examination, record keeping, diagnosis and treatment of the common causes of childhood morbidity and mortality. To improve case management by health workers in rural clinical situations everything possible must be done to make good clinical management easy and practical. This should involve provision of practical reinforcing tools, training and supervision which target rural health workers as valuable human resources, and community education which maximizes the contribution that community members can make to early diagnosis and good management.

- 17 **Garner P, Heywood P, Baea M, Lai D, Smith T.** Infant mortality in a deprived area of Papua New Guinea: priorities for antenatal services and health education. *PNG Med J* 1996 Mar;39(1):6-11.

This cross-sectional study of women was conducted in a deprived area of Papua New Guinea with an estimated infant mortality rate of 133/1000 live births. Mortality patterns derived from birth histories showed that neonatal deaths contribute proportionally more to infant mortality than postneonatal deaths, emphasizing the need for better care at delivery. To examine possible mechanisms for intervention, pregnant women were interviewed to determine patterns of antenatal clinic use, antimalarial drugs and micronutrient supplements given, and how much the women smoked. The results showed that the health system was failing to implement current routine supplementation and prophylaxis regimens, and that there was a need to revise national guidelines. A large proportion of pregnant women smoked during pregnancy, and this behaviour could be a target for future public health campaigns and health worker promotion advice to women.

- 18 **Han AM, Sleigh A, Vince J, Danaya R, Ogle G.** Persistent diarrhoea in children admitted to Port Moresby General Hospital. *PNG Med J* 1995 Dec;38(4):272-277.

A retrospective study of the records of children admitted to Port Moresby General Hospital with diarrhoea during 1992 and 1993 was carried out to determine the morbidity, mortality and risk factors associated with persistent diarrhoea. 858 admissions of children under five years of age who had diarrhoea were identified from the ward admission registers, and case records for 724 were studied. Persistent diarrhoea occurred in 20%, and nearly half of these were in the 12-23 months age group. Children with persistent diarrhoea had a case fatality rate of 4.9%. Seasonality was similar for both persistent and non-persistent diarrhoea. In the crude analysis children of 12 months and older had a greater risk of developing persistent diarrhoea than those less than 12 months (odds ratio for children 12-23 months was 2.0 and for children 24-59 months 1.7; confidence intervals were 1.2-3.1 and 1.0-2.9

respectively); however, this difference was not found after logistic regression analysis. Poor nutritional status was a significant risk factor for persistent diarrhoea and remained so after controlling for confounding variables (odds ratio 2.7; confidence interval 1.8-4.0).

- 19 **Han AM, Tozer RA.** Profile of blood donors in Port Moresby. *PNG Med J* 1996 Mar;39(1):31-37.

A record analysis study was conducted on blood donors in the greater Port Moresby area to determine the trend in the number of blood donations and the profile of donors between 1985 and 1994. There was no significant change in the donation trend between 1985-1989 and 1990-1994. While there were no changes in the age distribution between these two periods, there were significant increases in female donors (from 17% to 25%) and new donors (47% to 54%) during 1990-1994. The study data show that there has been a problem in the retention of donors in the greater Port Moresby area during the 1990-1994 period.

- 20 **Hanna JN, Ritchie SA, Merritt AD, Van Den Hurk AF, Phillips DA, Serafin IL, Norton RE, McBride WJ, Gleeson FV, Poidinger M.** Two contiguous outbreaks of dengue type 2 in north Queensland. *Med J Aust* 1998 Mar 2;168(5):221-225.

**OBJECTIVES:** To investigate two outbreaks of dengue type 2 in north Queensland, one in the Torres Strait beginning in late 1996, the other in a Cairns suburb in early 1997. **DESIGN:** Epidemiological investigation of all laboratory-confirmed cases of dengue, entomological investigation of the local environment, and laboratory analysis of the isolated dengue viruses. **MAIN OUTCOME MEASURES:** Numbers of confirmed and of locally acquired cases; virus serotype; comparison of nucleotide sequences between viruses isolated from the two outbreaks; and Breteau Index (BI = number of containers with larvae of the mosquito vector *Aedes aegypti* found per 100 houses investigated) on the affected islands and in the Cairns suburb. **RESULTS:** There were 201 confirmed cases of dengue in the Torres Strait outbreak, which lasted nearly seven months, and seven confirmed cases in the Cairns outbreak, which lasted about nearly 11 weeks. Most (190) were confirmed as dengue type 2. Nucleotide sequencing of viruses isolated from the two outbreaks showed they were identical. *Ae. aegypti* breeding sites were very common on the five Torres Strait islands surveyed (BIs, 73-219—high risk), but less so in the Cairns suburb (BI, 23). The most common breeding sites were water storage reservoirs, particularly rainwater tanks, on the outer Torres Strait islands, discarded containers (such as plastic containers, buckets and tyres) on Thursday Island, and garden items (such as flowerpot bases and jars) in Cairns. **CONCLUSIONS:** The virus responsible for the

- Cairns outbreak was most probably introduced from the Torres Strait, whereas the virus responsible for the Torres Strait outbreak was imported from Papua New Guinea. Preventive strategies tailored to specific locations are needed to reduce breeding of *Ae. aegypti* in north Queensland, and the consequent risk of future outbreaks of dengue.
- 21 **Jenkins C.**  
Changing hygiene behaviour in Papua New Guinea.  
*PNG Med J* 1995 Dec;38(4):320-324.  
Sanitation and water supplies are critical to health and an adequate standard of living. In Papua New Guinea water supplies in both rural and urban areas are installed with no attention to the social and cultural aspects of water use and personal hygiene. This paper argues that improved hygiene and sanitation could be achieved if sufficient resources were focused on the people who use water and sanitation systems and not simply on the systems themselves.
- 22 **Johnson FYA.**  
Gilles de la Tourette syndrome in Papua New Guinea.  
*PNG Med J* 1995 Jun;38(2):127-132.  
Gilles de la Tourette syndrome is characterized by (a) onset usually in childhood and adolescence between 2 and 15 years of age, (b) violent facial tics and coprolalia, (c) increased excitability and apathy, (d) progressive increase in the intensity of symptoms, and (e) a chronic course. The syndrome is three times more common in males than in females. It is no longer considered the rarity it used to be, with a reported frequency of 1 to 5 per 10,000 population in western countries. This paper is the first report of Gilles de la Tourette syndrome in Papua New Guinea. The family history method and the family study method were used for this study after the index patient had been identified. The case report is presented with a diagram of the pedigree of the extended family of the index patient. A total of four cases of Gilles de la Tourette syndrome were reported in three generations of the extended family. In conclusion, further clinical and genetic research (including twin studies) into Gilles de la Tourette syndrome is recommended in Papua New Guinea.
- 23 **Kemiki AD, Mziray HD, Kulunga A.**  
Pneumoperitoneum in a five-day-old baby: a case report.  
*PNG Med J* 1995 Sep;38(3):226-230.  
A five-day-old male was admitted to Mt Hagen Hospital with a history of vomiting, fever and rapidly progressive abdominal distension of one-day duration. Urgent abdominal X-ray revealed pneumoperitoneum. Laparotomy revealed a malrotation of the intestine with jejunal perforation. The baby died postoperatively, 21 hours after admission. The importance of plain abdominal X-rays and reliance on 'classical' plain film radiographic signs is highlighted.
- 24 **Kevau I, Clark WB.**  
Radial club hand with a short hypoplastic radius treated surgically.  
*Trop Doct* 1998 Apr;28(2):113-116.
- 25 **Kevau I, Watters DA.**  
Conservative management of femoral shaft fractures.  
*PNG Med J* 1996 Jun;39(2):143-151.
- 26 **Klufio CA, Amoa AB, Delamare O, Hombhanje M, Kariwiga G, Igo J.**  
Prevalence of vaginal infections with bacterial vaginosis, *Trichomonas vaginalis* and *Candida albicans* among pregnant women at the Port Moresby General Hospital Antenatal Clinic.  
*PNG Med J* 1995 Sep;38(3):163-171.  
A clinico-sociodemographic and microbiological survey was carried out at the Port Moresby General Hospital Antenatal Clinic to determine the prevalences of bacterial vaginosis, *Trichomonas vaginalis* and *Candida albicans* vaginal infections in pregnancy and to examine if the infections had any association with some suspected sociodemographic risk factors. The study was carried out between December 1990 and January 1991. Of 206 consecutive subjects surveyed, 79 (38%) had symptomatic infection. However, on speculum examination, abnormal discharge was seen in 188 (91%). 118 (57%) had microbiologically confirmed infection. The prevalences of the individual infections were *T. vaginalis* 19%, *C. albicans* 23% and bacterial vaginosis 23%. Combined infection, i.e. two infections occurring together in the same subject, was uncommon. None of the infections had an association with any of the sociodemographic characteristics studied. Of the 118 positive subjects, 52 (44%) complained of vaginal discharge and 55 (47%) complained of pruritus.
- 27 **Klufio CA, Amoa AB, Kariwiga G.**  
Primary postpartum haemorrhage: causes, aetiological risk factors, prevention and management.  
*PNG Med J* 1995 Jun;38(2):133-149.
- 28 **Koski K.**  
[Midwife's everyday life in Papua New Guinea][Fin].  
*Katilolehti* 1998 Jan;103(1):26-27.  
An Australian-Finnish midwife tells about her experiences when working as a midwife and a teacher in Papua New Guinea.
- 29 **Kramer PB.**  
Knowledge about AIDS and follow-up compliance in patients attending a sexually transmitted disease clinic in the highlands of Papua New Guinea.  
*PNG Med J* 1995 Sep;38(3):178-190.  
In a survey of 300 consecutive new attenders at the Porgera Health Centre Sexually Transmitted Disease Clinic information was obtained regarding knowledge about AIDS from male and female attenders. The differences between the sexes regarding a variety of socioeconomic variables,

knowledge about AIDS and their compliance to follow-up appointments were studied as well as possible relationships between these social variables and the degrees of AIDS knowledge and compliance. Males tended to originate from further afield, be more educated, be either in salaried employment or not working at all, and be single as compared to females. They also admitted to more extramarital sexual contacts and received more adequate treatment. Knowledge about AIDS was also significantly higher amongst male attenders and in this group was correlated strongly with overall educational attainment and employment status but did not show any relationship with the number of extramarital contacts admitted to. Only 9% of the patients knew about condoms and their role in prevention. Follow-up compliance was generally poor, and not significantly higher in those with higher scores of knowledge about AIDS, but showed a relationship with the type of disease being treated and with the ultimate adequacy of treatment received.

30 **Laurenson IF, Lalloo DG, Naraqi S, Seaton RA, Trevett AJ, Matuka A, Kevau IH.**

*Cryptococcus neoformans* in Papua New Guinea: a common pathogen but an elusive source. *J Med Vet Mycol* 1997 Nov-Dec;35(6):437-440.

Around Port Moresby, Papua New Guinea (PNG), the annual incidence of cryptococcal meningitis is estimated to be up to 42.8 per million population; *Cryptococcus neoformans* var. *gattii* is the predominant causative agent. In Australia and California, environmental isolations have established an ecological association of *C. neoformans* var. *gattii* with *Eucalyptus camaldulensis*, *E. tereticornis*, and more recently *E. rudis* and *E. gomphocephala*. In PNG few *E. camaldulensis* survive experimental planting, *E. tereticornis* is endemic and there are no records of planting of the non-endemic *E. rudis* and *E. gomphocephala*. Despite extensive sampling of eucalypt-associated and other sources, we were unable to identify the ecological niche of *C. neoformans* var. *gattii* and *neoformans* in this region.

31 **Liko O, Chalau P, Rosenfeld JV, Watters DA.**

Head injuries in Papua New Guinea.

*PNG Med J* 1996 Jun;39(2):100-104.

Head injuries are the commonest cause of death in the surgical wards in Port Moresby and the commonest cause of death in road accidents. Three prospective and retrospective studies performed over the last decade aimed to determine the pathology and outcome in 274 head injuries admitted to Goroka in 1988-1991 (4 years) and Port Moresby in 1984-1985 and 1992-1993 (total 2.5 years). Head injuries were managed by general surgeons without CT scanning or intracranial pressure monitoring. There were 196 adults and 78 (28%) children; 195 were male and 79 female. Assaults (32%), motor vehicle accidents (49%) and falls (17%) were the commonest modes of injury. The case fatality rate was 21% (57 of 274 cases). Six of the deaths were avoidable. The fatality rates

for admission Glasgow Coma Scores of 3-5, 6-8 and over 9 were 81%, 21% and 3% respectively. Two patients died of infection complicating open depressed fractures. The case fatality rate for extradural haematoma was 20% and subdural haematoma 67%. Nine patients died of associated abdominal injuries. Most of the deaths were unavoidable because of the severity of primary brain injury. The speed of diagnosis and quality of care could have been improved but the most important area is management of the airway. General surgeons properly trained in trauma care (which includes emergency airway management) are well able to cope with the majority of head-injured patients in Papua New Guinea.

32 **Mathew PK.**

Changing trends in tribal fights in the highlands of Papua New Guinea: a five-year review.

*PNG Med J* 1996 Jun;39(2):117-120.

Tribal warfare is a way of life in the highlands of Papua New Guinea. In earlier times direct confrontation with bushknives and axes, and shooting with bows and arrows were common. In recent years there have not been as many instances of direct confrontation with bushknives and axes, but the use of bows and arrows is on the rise. Since 1993, guns have been increasingly used, with devastating results. In 1993, 18 deaths were reported from tribal warfare in one area of the Southern Highlands Province, especially from gunshots, while in 1994, 24 deaths were reported from another area. A five-year review of tribal fight admissions to Mendi Hospital, from 1990 to 1994, showed an increase in the number and proportion of gunshot wounds; there were none in 1990-1992 but they constituted 18% of tribal fight injuries in 1993 and 33% in 1994.

33 **Mathew PK, Kainge T, Kapua F, Barua R.**

Management of vascular trauma in a provincial hospital.

*PNG Med J* 1996 Jun;39(2):126-128.

Three cases of major vessel injuries referred to Mendi Hospital during 1993-1994 are reported. All three vessels were repaired successfully. The surgical management of these cases is described.

34 **McManus DP.**

Improved diagnosis as an aid to better surveillance of *Taenia solium* cysticercosis, a potential public health threat to Papua New Guinea.

*PNG Med J* 1995 Dec;38(4):287-294.

*Taenia solium* cysticercosis has been recognized as a public health problem in Indonesian Irian Jaya since its unfortunate introduction in a number of infected pigs imported from Bali. From its original point of introduction in 1971, the infection has spread from the Wissel Lakes area to other places within Irian Jaya. The present situation at the border between Irian Jaya and Papua New Guinea (PNG) is difficult to assess accurately but, in light of the flow of refugees and the traditional rights of movement of people with their pigs in the border area, PNG populations are now at risk. Government health officers and

- veterinarians in PNG are well aware of this threat and have been watching closely for transmission of *Taenia solium* into PNG. A rigorous survey of Irianese refugees at the border and surrounding areas in PNG using recently developed immunodiagnostic procedures such as the EITB (enzyme immuno-electrotransfer blot) for detecting human and pig cysticercosis and the dipstick ELISA (enzyme-linked immunosorbent assay) for identifying *T. solium* carriers, coupled with careful assessment of medical history and clinical and stool examination, is, however, required. Such a study would allow evaluation of the prevalence of cysticercosis and taeniasis in Irian Jaya refugees residing in camps in PNG. The study would also determine the extent to which the parasite has spread easterly and, importantly, whether cysticercosis/taeniasis has crossed the border and is endemic in PNG, thereby constituting a potentially serious public health problem.
- 35 **Merritt A, Ewald D, Van Den Hurk AF, Stephen SJ, Langrell J.**  
Malaria acquired in the Torres Strait.  
*Commun Dis Intell* 1998 Jan 22;22(1):1-2.  
Two cases of *Plasmodium vivax* malaria acquired in the Torres Strait during 1997 are reported. The source of infection could not be firmly established but two possibilities are discussed. Anopheline mosquitoes are present in the Torres Strait, and malaria is frequently imported from Papua New Guinea (PNG), thus transmission by local mosquitoes poses an ongoing threat. However, in this particular location, Badu Island, no recent importation of malaria was identified and mosquito surveillance demonstrated low numbers of anopheline species at the time and for the preceding two years. These cases could also feasibly be explained by a variant of 'baggage malaria' in which mosquitoes already infected with the malaria parasite were imported from PNG in one of the small boats that regularly make this journey. These cases serve as a reminder to health care providers in northern Australia to consider the diagnosis of malaria in patients presenting with a febrile illness.
- 36 **Mola GD.**  
Symphysiotomy: technique, problems and pitfalls, and how to avoid them.  
*PNG Med J* 1995 Sep;38(3):231-238.
- 37 **Mola GD.**  
Symphysiotomy or caesarean section after failed trial of assisted delivery.  
*PNG Med J* 1995 Sep;38(3):172-177.  
The perinatal and maternal outcomes of 65 symphysiotomies and 108 caesarean sections carried out after failed trial of assisted delivery at the Port Moresby General Hospital between 1988 and 1994 were retrospectively analyzed. There were no significant differences in perinatal outcomes between the treatment groups. There were no maternal deaths in either group. Mothers who had symphysiotomy had a longer postoperative stay in hospital but fewer complications requiring further surgery. There are many advantages of symphysiotomy, particularly in developing countries, following a failed trial of assisted delivery, provided the indications for it are strictly met. Obstetricians experienced in the technique are able to apply it at the optimal time, with long-term benefit to their patients, who thereby avoid the risks of pregnancy subsequent to caesarean section.
- 38 **Monchy D, Huerre MR, De Bievre C.**  
Deep-seated fungal diseases in the South Pacific, especially in New Caledonia.  
*Mycoses* 1998 Jan-Feb;41(1-2):31-34.  
The main deep-seated fungal diseases and their encountered pathology in New Caledonia and other islands of the South Pacific are reviewed (1970-96). Cryptococcosis is encountered in all islands of the South Pacific, Australia and Papua New Guinea, with a predominance of variety gattii, which is associated with some species of *Eucalyptus*. Histoplasmosis is not uncommon, and there was an epidemic in New Caledonia in 1994 among people who had visited a bat-inhabited cave. Mycetomas, in particular presenting as pale granules in tissues, are encountered in New Caledonia, Vanuatu, Papua New Guinea, Fiji and French Polynesia. Other fungal infections, such as zygomycosis, sporotrichosis (three cases) and chromomycosis (six cases) are rarely observed in New Caledonia.
- 39 **Moravec F, Spratt DM.**  
*Crocodylocapillaria longiovata* n. gen., n. sp. (Nematoda: Capillariidae) from the stomach of crocodiles in Australia and New Guinea.  
*J Parasitol* 1998 Apr;84(2):426-430.  
A new nematode, *Crocodylocapillaria longiovata* n. gen. and n. sp., is described from the stomach of wild and farmed young crocodiles, *Crocodylus johnstoni* Krefft, and *Crocodylus porosus* Schneider, from northern Australia and Papua New Guinea; it is undoubtedly identical with the nematodes previously reported as *Capillaria* sp. from *Crocodylus novaeguineae* Schmidt from Irian Jaya, Indonesia. This capillariid species represents a new genus, being characterized mainly by the presence of elongate eggs with unusually long protruding polar plugs, a well developed vulvar appendage, a weakly sclerotized spicule, proximal and distal parts of the spicular sheath with spines, and the male posterior end with 2 large lateral caudal lobes and a pair of papillae near the cloacal opening. The body length of *C. longiovata* males and females is 5,576-7,208 microm and 8,609-14,008 microm, respectively, the spicule is 276-369 microm long; the size of the egg proper is 48-60 x 15-21 microm, length of polar plugs 15-18 microm. *Neocapillaria* Yi and Guitang, 1994, a junior homonym of *Neocapillaria* Moravec, 1987, is re-named *Sinocapillaria* nom. n. and placed as a synonym of *Pseudocapillaria* Freitas, 1959. *Indocapillaria* De and Maity, 1995 is retained as a subgenus of *Pseudocapillaria* because of the possession of a vulvar appendage in the type species. *Neocapillaria* Moravec, 1987

- remains a subgenus of *Capillaria* Zeder, 1800. A key to genera of the Capillariidae from poikilotherm vertebrates is provided; *C. longiovata* is the first capillariid species described from the digestive tract of crocodiles.
- 40 **Murthy DP, SenGupta SK, Mola G, Rageau O, Mathias A.**  
Sclerosing stromal tumour of the ovary.  
*PNG Med J* 1996 Mar;39(1):48-55.  
Two cases of sclerosing stromal tumour of the ovary in young Melanesian females are described and the differential diagnosis is discussed. Sclerosing stromal tumour of the ovary is a rare benign tumour of ovarian stromal origin which is associated with endocrine activity in a few cases. One of the patients presented with signs of precocious puberty and the tumour in this patient was considered as a functioning lesion.
- 41 **O'Donnell J, Goldman JM, Wagner K, Ehinger G, Martin N, Leahy M, Kariuki N, Dokal I, Roberts I.**  
Donor-derived *Plasmodium vivax* infection following volunteer unrelated bone marrow transplantation.  
*Bone Marrow Transplant* 1998 Feb;21(3):313-314.  
A 14-year-old girl from the UK underwent volunteer unrelated donor bone marrow transplant (VUD BMT) for accelerated phase chronic myeloid leukaemia. On day +40 she became febrile, and peripheral blood smears demonstrated a 1% *Plasmodium vivax* parasitaemia. Although she had never been outside the UK, her male donor had documented *Plasmodium vivax* infection during a vacation in Papua New Guinea. Following appropriate treatment, he had been asymptomatic for 11 months before marrow harvesting. This is the first case report of malarial transmission by VUD BMT, and illustrates the potential problem of recrudescence of latent, dormant forms of *Plasmodium vivax* infection following transplantation into an immuno-compromised recipient. Even after appropriate therapy, malarial infection should be included in the differential diagnosis for all post-transplant febrile episodes.
- 42 **Paru R, Hii J, Lewis D, Alpers MP.**  
Relative repellency of woodsmoke and topical applications of plant products against mosquitoes.  
*PNG Med J* 1995 Sep;38(3):215-221.  
The repellent action of various plant products was evaluated against anopheline and culicine mosquitoes in a rural village in the Wosera area, Papua New Guinea. A 5 x 5 Latin square design was used. Wood from four home-grown plant species was burned outdoors in the first experiment, and mosquitoes attracted to human bait were collected from 1800 to 2400 hours. In the second experiment, bruised leaves from another four plant species were rubbed on to the legs of human baits followed by mosquito collections. Woodsmoke and topical applications reduced biting of human volunteers by 79% and 51%, respectively. This low-technology control method may be included in the range of options for householders in order to reduce mosquito nuisance and improve their standard of health.
- 43 **Passey M.**  
The new problem of typhoid fever in Papua New Guinea: how do we deal with it?  
*PNG Med J* 1995 Dec;38(4):300-304.  
This paper reviews some of the issues relating to typhoid fever in Papua New Guinea. Before the mid-1980s only sporadic cases of typhoid were reported but it is now one of the greatest public health problems in the highlands and some urban areas. In one study near Goroka an annual incidence rate of 1208 per 100,000 people was found, with settlers from other areas at greater risk than the local landowners. Problems relating to management included differentiation from other diseases, the limitations of the Widal test and poor compliance among outpatients. In Papua New Guinea it appears that transmission is largely from person to person, with little evidence for water-borne transmission. The prolonged convalescent excretion of *Salmonella typhi* and the difficulties this poses for control of the disease are discussed. Prevention will only be achieved in the long term by improvements in hygiene and sanitation, though more immediate control could be achieved by vaccination with an appropriate vaccine.
- 44 **Passey M.**  
Social and ecological considerations in the prevention of enteric infections.  
*PNG Med J* 1995 Dec;38(4):257-261.
- 45 **Passey M, Mgone CS, Lupiwa S, Suve N, Tiwara S, Lupiwa T, Clegg A, Alpers MP.**  
Community based study of sexually transmitted diseases in rural women in the highlands of Papua New Guinea: prevalence and risk factors.  
*Sex Transm Infect* 1998 Apr;74(2):120-127.  
OBJECTIVE: To estimate the prevalence of sexually transmitted diseases (STDs) and determine their risk factors/markers among a rural population of women in the highlands of Papua New Guinea. METHODS: Community based random cluster sample of women of reproductive age were interviewed and examined and had specimens collected for laboratory confirmation of chlamydial and trichomonal infection, gonorrhoea, syphilis, and bacterial vaginosis. RESULTS: *Chlamydia trachomatis* was detected in 26%, *Trichomonas vaginalis* in 46%, *Neisseria gonorrhoeae* in 1%, syphilis in 4%, pelvic inflammatory disease (PID) (diagnosed clinically) in 14%, and bacterial vaginosis in 9% of 201 women. 59% of the women had at least one STD. In a multivariate logistic regression analysis taking the clustered sampling into account, independent risk factors for chlamydial infection were age < or = 25 years, < four living children, visualization of yellow mucopurulent endocervical secretions on a white swab, and bacterial vaginosis. Being married to a man who did not have other wives was protective. For trichomonal infection, independent risk factors were having no formal education, infertility, more than one sexual partner in the

previous 12 months, treatment for genital complaints in the previous 3 months, abnormal vaginal discharge detected on examination, and chlamydial infection. Similar levels of trichomonal infection were found in all age groups. Among married women, rates of infection correlated with their perception of their husband having had other sexual partners in the previous 3 months, and this relationship was significant for chlamydial infection among women over 25. CONCLUSION: STDs are a major problem in this population, with the risk factors varying by outcome. Current treatment regimens are inappropriate given the high prevalence of trichomonal infection, and the available services are inadequate. Effective interventions are required urgently to reduce this burden and to prevent the rapid transmission of HIV.

- 46 **Pip A, Watters D, Murthy D, Wood N, Donnelly P.**

Hormone receptor status of breast cancer in Papua New Guinea.  
*Lancet* 1998 May 2;351(9112):1328-1329.

- 47 **Pritchard DI.**

Gastrointestinal nematodes: the Karkar experience.  
*PNG Med J* 1995 Dec;38(4):295-299.

This paper reviews our research on the hookworm *Necator americanus* over several years. Our field site for the research was on Karkar Island, Papua New Guinea, where we found a prevalence of *N. americanus* infection among adults of nearly 100%. The intensity of infection was related to host age and to the development of iron deficiency anaemia, which occurred at a much lower infection intensity than had been previously reported. We studied the immune response to infection and our results initially suggested that antibody responses and eosinophilia do not protect the host against infection. However, we have more recently found a negative correlation of both IgE and eosinophilia with the weight and fecundity of *N. americanus* which suggests that the immune response does have some effect on *N. americanus* and that this immunity is dependent on the Th2 subset of T lymphocytes. Following treatment for hookworm, the prevalence of *N. americanus* returned almost to pretreatment levels within 2 years, with the rate of acquisition of adult worms independent of host age. A significant predisposition to hookworm infection was demonstrated by individuals. Prevention will result from measures to reduce the transmission and intensity of infection, and can be achieved through improved sanitation or by vaccination. However, vaccination is not yet a viable option because of our limited knowledge about protective immunity.

- 48 **Richens J.**

Typhoid in the highlands of Papua New Guinea 1984-1990: a hospital-based perspective.  
*PNG Med J* 1995 Dec;38(4):305-314.

A first-hand account is given of the epidemic of typhoid in the Goroka area as it evolved from 1984 to 1990. The monthly admissions for typhoid to Goroka Base Hospital showed a peak in 1988.

The sex and age distribution showed a predominance of young adults. The overall case fatality rate of hospitalized patients was of the order of 10-15%; in a carefully documented group of 374 patients 27% were assessed as having severe typhoid and this subgroup had a case fatality rate of 44%. The clinical features were studied in 516 patients. The high mortality appeared to result from septic shock; ileal perforation was found in only 1.3% of patients. A skin lesion equivalent to but significantly different from the classic rose spot was found in 30% of patients. The typhoid facies was commonly encountered in patients with well-established typhoid. Cerebellar tremor and hearing loss were frequent diagnostic findings. Blood and bone marrow cultures were used to confirm the diagnosis; bone marrow culture proved practicable but gave little increased yield over blood culture. A clinical algorithm to help distinguish typhoid and malaria was developed, principally for use in health centres in the highlands. The mainstay of treatment was chloramphenicol and very few problems were encountered with its use in inpatients. Bacteriological resistance to chloramphenicol did not develop over the study period. Other drugs, such as fluorinated quinolones, may be more effective when all aspects are considered, despite higher cost, but this remains to be investigated. Hydrocortisone in patients with severe disease was evaluated and shown to be ineffective but whether high-dose dexamethasone would reduce the mortality from typhoid in patients in Papua New Guinea still remains an unanswered question.

- 49 **Roberts AH.**

The treatment of hand injuries.  
*PNG Med J* 1996 Jun;39(2):135-142.

A major hand injury can completely change a person's life. The consequences of the injury can be reduced by proper assessment, appropriate treatment and careful follow-up. Whenever experienced help is available then it should always be sought. This article describes the management of hand injuries. In Papua New Guinea the worst disasters occur when injuries are missed on initial assessment and the patient is not referred to a surgeon. Another common cause of poor outcome is failure to splint the hand in the correct position.

- 50 **Seaton RA.**

The management of cryptococcal meningitis in Papua New Guinea.  
*PNG Med J* 1996 Mar;39(1):67-73.

Cryptococcal meningitis is a difficult disease to treat and requires biochemical and haematological monitoring to detect the common adverse effects of treatment. Combination therapy with amphotericin B and flucytosine for at least 6 weeks is the best treatment so far evaluated. The role of azole drugs should become clearer as the results of large multicentre studies become available in the future. High case fatality and morbidity rates despite standard treatment suggest that other ancillary treatments such as

- corticosteroids and other treatments directed at lowering raised intracranial pressure may also be required in some patients.
- 51 **Seaton RA, Trevett AJ, Wembri JP, Nwokolo N, Naraqi S, Black J, Laurenson IF, Kevau I, Saweri A, Lalloo DG, Warrell DA.** Randomized comparison of intramuscular artemether and intravenous quinine in adult, Melanesian patients with severe or complicated, *Plasmodium falciparum* malaria in Papua New Guinea. *Ann Trop Med Parasitol* 1998 Mar;92(2):133-139.  
An open-label, randomized, controlled trial was used to compare the safety and efficacy of intramuscular artemether (a loading dose of 3.2 mg/kg, followed by 1.6 mg/kg daily for 4 days) and intravenous quinine (a loading dose of 20 mg quinine dihydrochloride/kg, followed first by 10 mg/kg every 8 h, each injection taking 4 h, for at least 48 h, and then oral quinine for a total of 7 days) in the management of strictly defined severe/complicated malaria in Melanesian adults. Four (12%) of the 33 patients who enrolled and completed follow-up died (one of the 15 who received artemether and three of the 18 who received quinine). Overall, cerebral malaria was uncommon (6%) whilst jaundice was common (76%). The time taken to clear 50% of parasites was less in those treated with artemether (median = 8 h; range = 2-24 h) than in those in the quinine group (median = 14 h; range = 2-25 h; P = 0.05). Temperature defervescence was also quicker in those treated with artemether (median = 32 hours; range = 20-112 h) than in those in the quinine group (median = 48 h; range = 28-88 h; P = 0.034). Hypoglycaemia was not observed in any patient treated with artemether but complicated therapy in 11 (79%) of the 14 patients given quinine who had not had pre-treatment spontaneous hypoglycaemia. No serious adverse effects were attributable to artemether. The *Plasmodium falciparum* infections observed during the 1 month of follow-up, in three patients who had received artemether and two who had been given quinine, were probably due to recrudescence. *Plasmodium vivax* parasitaemias were also observed during follow-up, in one or two patients in each treatment group. Artemether appears safe in Melanesian adults and is probably as effective as intravenous quinine in the treatment of severe or complicated falciparum malaria.
- 52 **SenGupta SK, Sinha AK, White JC, Barua DL, Korinihona A.** Intestinal infarction in systemic lupus erythematosus - report of a case with an unusual obliterative vascular lesion. *PNG Med J* 1996 Mar;39(1):43-47.  
Intestinal infarction is a rare complication of systemic lupus erythematosus (SLE). A 26-year-old Papua New Guinean female who developed such a complication and underwent emergency laparotomy is described. The pathological changes in the mesenteric vessels and possible pathogenetic mechanisms are discussed. The relevant literature is briefly reviewed.
- 53 **SenGupta SK, Vince JD, Chakravorty P, Sinha SK.** Langerhan cell granulomatosis with unusual FNAC findings. *Diagn Cytopathol* 1998 May;18(5):349-351.  
An interesting case of a multifocal Langerhans cell granulomatosis in an 18-mo-old female child is described. The diagnosis was confirmed by fine-needle aspiration cytology. The unusual findings at the initial stage of the disease and its possible etiopathogenesis are discussed.
- 54 **Suarkia D, Lupiwa T.** Health implications for Papua New Guinea of chlamydial infections. *PNG Med J* 1995 Jun;38(2):73-78.
- 55 **Temu P.** Health communication: the key to sustainable development. *Promot Educ* 1997 Sep;4(3):17-21.
- 56 **Tetaga JE.** Challenges to implementing health promoting schools: the Papua New Guinea experience. *Promot Educ* 1997 Sep;4(3):11-14.
- 57 **Todaro W, Wall C, Edwards K, Cleghorn G.** Acceptability of a rice-based oral rehydration solution in Port Moresby General Hospital's Children's Outpatient Department. *PNG Med J* 1995 Dec;38(4):278-283.  
The guardians of children brought to the Port Moresby General Hospital's Children's Outpatient Department with a chief complaint of diarrhoeal disease were questioned regarding their preference of glucose-based vs rice-based oral rehydration solution (ORS) in order to determine the acceptability of a rice-based ORS. Of the 93 guardians interviewed, greater than 60% preferred the glucose-based solution in its mixability, appearance and taste, and 65% initially reported that their children preferred the taste of the glucose solution. However, after a 30-minute trial, only 58% of children still preferred the glucose solution. In a country where diarrhoeal disease is a leading cause of child death and guardians are the primary health care providers, the acceptability of an ORS is critical to the morbidity and mortality of Papua New Guinea's children.
- 58 **Tozer RA.** Papua New Guinea Red Cross Blood Transfusion Service: present status and future considerations. *PNG Med J* 1996 Mar;39(1):38-42.  
About 28,000 units of blood are collected per annum. This is adequate for present needs. 11 donors have been found positive for human immunodeficiency virus (HIV) since testing started in 1987, 8 of these in the last year and a half. No case of transmission of HIV by transfusion in Papua New Guinea has been established. Although the prevalence varies in different areas, on average 15% of donors are positive for hepatitis B. The impact of these figures, future requirements for quantity of blood and the need for additional

testing of donations for hepatitis C (HCV) and cytomegalovirus (CMV) will require clear evaluation of the choices and firm decisions.

- 59 **Valley A, Valley L.**  
Seabather's eruption in Papua New Guinea.  
*Trop Doct* 1998 Jan;28(1):53.

- 60 **Van Holst Pellekaan S, Frommer M, Sved J, Boettcher B.**  
Mitochondrial control region sequence variation in aboriginal Australians.  
*Am J Hum Genet* 1998 Feb;62(2):435-449.

The mitochondrial D-loop hypervariable segment 1 (mt HVS1) between nucleotides 15997 and 16377 has been examined in aboriginal Australian people from the Darling River region of New South Wales (riverine) and from Yuendumu in central Australia (desert). 47 unique HVS1 types were identified, varying at 49 nucleotide positions. Pairwise analysis by calculation of BEPPI (between population proportion index) reveals statistically significant structure in the populations, although some identical HVS1 types are seen in the two contrasting regions. mt HVS1 types may reflect more-ancient distributions than do linguistic diversity and other culturally distinguishing attributes. Comparison with sequences from five published global studies reveals that these Australians demonstrate greatest divergence from some Africans, least from Papua New Guinea highlanders, and only slightly more from some Pacific groups (Indonesian, Asian, Samoan, and coastal Papua New Guinea), although the HVS1 types vary at different nucleotide sites. Construction of a median network, displaying three main groups, suggests that several hypervariable nucleotide sites within the HVS1 are likely to have undergone mutation independently, making phylogenetic comparison with global samples by conventional methods difficult. Specific nucleotide-site variants are major separators in median networks constructed from Australian HVS1 types alone and for one global selection. The distribution of these, requiring extended study, suggests that they may be signatures of different groups of prehistoric colonizers into Australia, for which the time of colonization remains elusive.

- 61 **Verdrager J.**  
Kuru and 'new variant' CJD.  
*Southeast Asian J Trop Med Public Health* 1997 Sep;28(3):535-540.

Acquired transmissible spongiform encephalopathies in humans include kuru (a disease which was associated with ritualistic cannibalism in Papua New Guinea), iatrogenic Creutzfeldt-Jakob disease and a newly recognized variant form of Creutzfeldt-Jakob disease (nvCJD). Clinical and neuropathological features of nvCJD are reminiscent of kuru: early and progressive cerebellar ataxia and numerous characteristic kuru-type amyloid plaques surrounded by spongiform change. In contrast to typical cases of sporadic CJD, kuru and nvCJD affect young patients. The newly recognized form of CJD has been identified in ten young people in the UK in 1996,

approximately 10 years after the beginning of the bovine spongiform encephalopathy (BSE) epidemic in the UK. Molecular analysis has shown that nvCJD has strain characteristics that are distinct from other types of CJD but similar to those of BSE. In the UK an estimated half a million BSE-infected cows entered the human food chain before the bovine offal ban of 1989. To be effective the oral route probably requires high-infectivity titers which are encountered only in the brain, spinal cord and eyes of naturally infected cows. In patients with kuru, titers of more than  $10^8$  infectious doses per gram were reported in the brain tissues. As a result of the estimated very long incubation period of nvCJD (10 to 30 years or more) the predicted nvCJD epidemic will have the shape of a normal distribution curve with a peak expected in 2009. The epidemic may extend until 2030. There is already an example to illustrate such a curve in its descending line: the decline of kuru deaths following the interruption of ritual cannibalism.

- 62 **Vince JD.**  
Diarrhoea in children in Papua New Guinea.  
*PNG Med J* 1995 Dec;38(4):262-271.

National data for diarrhoeal disease in children can only be used as a very rough guide to morbidity and mortality, since they are based on incomplete reporting. Furthermore, when only one diagnosis per attendance, admission or cause of death is recorded, the true importance of diarrhoea as a cause of morbidity and mortality may be obscured. This may in part explain discrepancies between figures recorded in national and hospital statistics and those recorded in detailed studies of diarrhoeal admissions. While there appear to be quite marked differences in the relative importance of diarrhoea in different parts of the country, and while diarrhoeal disease is less of a scourge than in some other parts of the world, it is nevertheless a major cause of attendance at health facilities, the second or third most common cause of admission to many of the hospitals in the country, and a significant and often preventable cause of death. Limited studies of diarrhoeal aetiology indicate the major importance of rotavirus, *Shigella* and enteropathogenic and enterotoxigenic *Escherichia coli*. The control of diarrhoeal diseases in children is based not only on early and appropriate treatment, but also on preventive strategies. These include breastfeeding (which has saved the lives of many thousands of Papua New Guinean children and which is once again under threat), ensuring good host defence by good nutrition, immunization and early treatment of childhood illness, and ensuring satisfactory sanitation and hygiene. Increasing fluid intake to prevent dehydration remains the most important part of the early management of acute diarrhoeal disease. In the management of children with dehydration, UNICEF glucose-based oral rehydration therapy is widely available but not used as well as it should be. There are significant advantages in cereal-based oral rehydration solutions, and the use of such solutions, locally prepared, should be

- encouraged. Breastfeeding should be continued during episodes of diarrhoea, unless there is the specific contraindication of lactose intolerance. In all events the child's nutritional intake should be maintained and if possible increased during episodes of diarrhoea. There are specific indications for the use of antibiotics in the management of children with diarrhoea. They should not be used, and may be harmful, in the absence of these indications. Persistent diarrhoea - lasting more than 14 days - is associated with a high mortality and severe malnutrition. It is therefore important that children whose diarrhoea is prolonged for more than 7 days are managed appropriately, using the standard guidelines.
- 63 **Wall C, Todaro W, Edwards K, Cleghorn G.**  
A 3-hour quantitative comparison of glucose-based versus rice-based oral rehydration solution intake by children with diarrhoea in Port Moresby General Hospital.  
*PNG Med J* 1995 Dec;38(4):284-286.  
Measurements were made of the intake of a WHO/UNICEF glucose-based and a rice cereal-based oral rehydration solution (ORS) by children with diarrhoea. 20 children who presented to the Children's Outpatient Department at Port Moresby General Hospital with acute diarrhoea and mild dehydration were randomly assigned to an ORS and measurements were taken over the following 3 hours. For data analysis, the patients were paired by weight. Testing the means of the paired samples by t test showed that there was no significant difference between the amount of rice ORS and the amount of glucose ORS taken over 3 hours.
- 64 **Watson A.**  
Preparing for a tropical expedition.  
*Aust Fam Physician* 1998 Jan-Feb;27(1-2):55-58.  
This article reviews the medical preparations made for a 3-month expedition, the 'Northwest Patrol' which crossed remote Papua New Guinea in 1995-1996. It includes a variety of tips about some of the common medical problems encountered on tropical expeditions.
- 65 **Watters DA.**  
When does the patient with diarrhoea need surgery?  
*PNG Med J* 1995 Dec;38(4):332-338.
- 66 **Watters DA, Dyke TD, Maihua J.**  
The trauma burden in Port Moresby.  
*PNG Med J* 1996 Jun;39(2):93-99.
- 67 **Watters DA, Dyke T.**  
Trauma in Papua New Guinea: what do we know and where do we go?  
*PNG Med J* 1996 Jun;39(2):121-125.  
Trauma is a major health problem in Papua New Guinea. Injuries are the commonest cause of death in the productive age group of 15-44 years. Trauma is the leading cause of surgical death in Port Moresby General Hospital. The common causes of injury are road traffic accidents, domestic violence, criminal assault, tribal fights, accidents at home and at work, burns and falls. This review summarizes what has been published on the different causes of trauma in Papua New Guinea. Though much has been written little has been done to implement the recommendations made. Papua New Guinea needs a spinal unit and it needs burns units in its major hospitals. There should be better facilities for rehabilitation. Little has been done to curb tribal fighting and domestic violence. Road traffic fatalities have at least remained static in the last decade and wearing seat belts is now compulsory, but the law must be enforced. Driving after drinking alcohol must be stopped and protective roll bars or cages must be fitted to all open-back utility vehicles which carry passengers. Progress requires vision and commitment by surgeons, leaders in public health, hospital administrators and politicians.
- 68 **Watters DA, Lourie JA.**  
Trauma in Papua New Guinea: an epidemic out of control.  
*PNG Med J* 1996 Jun;39(2):91-92.

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(Forward to the Membership Secretary, Medical Society of Papua New Guinea, PO Box 60, Goroka, EHP 441, Papua New Guinea)

## INFORMATION FOR AUTHORS

The Papua New Guinea Medical Journal invites submission of original papers and reviews on all aspects of medicine. Priority will be given to articles and subjects relevant to the practice of medicine in Papua New Guinea and other countries in the South Pacific.

Manuscripts are accepted for publication only with the understanding that they have not been published nor submitted for publication elsewhere. All manuscripts will be reviewed and sent out for referees' comments before being accepted.

Original Articles: Reports of original and new investigations or contributions.

Brief Communications and Case Reports: Contents similar to that of original articles but text should be no more than a total of 4 Journal pages including all figures and tables.

Reviews: Critical analysis of previously collected and published information.

Letters: Short reports of clinical experience or topics of interest. Text should not exceed 1 page of the Journal.

Other types of manuscript may also be accepted for publication at the Editor's discretion.

Submitted manuscripts should conform to the instructions set out below. Manuscripts not conforming to these instructions will be returned.

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Submit the original and one or, preferably, two duplicates. If possible, submit a virus-free electronic copy on disk, and specify the software used. We would prefer Word for Windows version 6.0 or later. All sections of the manuscript, including text, references, tables and legends, should be typed in double spacing. Manuscripts should not be right-justified. Each paper should include an informative Summary, Introduction, Patients/Materials and Methods, Results, Discussion and References. The title page should include the title, full names of all authors, names and addresses of institutions where the work has been done and full present address of the senior or corresponding author.

References should be kept to a minimum, and must be in the Vancouver style. Authors should check all references against the original source. Sample references are shown below.

- 3 **Garner PA, Hill G.** Brainwashing in tuberculosis management. *PNG Med J* 1985;28:291-293.

- 4 **Cochrane RG.** A critical appraisal of the present position of leprosy. In: Lincicome DP, ed. *International Review of Tropical Medicine*. New York: Academic Press, 1961:1-42.

## Illustrations

Tables and figures (an original with 2 copies of each) should be prepared on separate pages. Photographs should be glossy prints, either 7 cm or 14.5 cm in width. Graphs and charts must be prepared in India ink on stiff white paper, or presented as glossy photographs. Photomicrographs should have internal scale markers. Each table should have a heading and footnotes which make it understandable without reference to the text. Each figure should have a legend; figure legends should be typed together on a separate sheet. Indicate the top of figures lightly in pencil on the back.

Abbreviations: Standard abbreviations and units should be used.

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Orthography: The Shorter Oxford English Dictionary is followed.

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