

# Scientific Abstracts for Oral and Poster Presentations

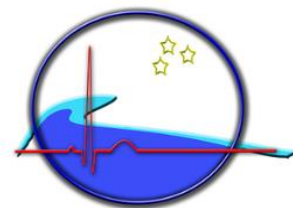
## 4th VANUATU HEALTH RESEARCH SYMPOSIUM

12-13 October 2023 - Port Vila





Honourable Ralph Regenvanu,  
Member of Parliament  
for Port Vila Constituency



MEDICAL OPTIONS VANUATU





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## Plenary Speaker

### Associate Professor David Symmons

The plenary presentation will briefly describe some of the evidence for climate change and then the effects of global warming on natural disasters. This will be followed by a discussion of experience in various disasters in multiple countries with then a description of responses to these disaster situations. Then there will be a discussion of the responses that could be made in Vanuatu

#### **Bio**

Assoc. Prof. David Symmons is an Emergency Physician based in Townsville Australia. He is married with three children and four grandchildren.

Assoc Prof Symmons is affiliated with the Australasian College for Emergency Medicine, Townsville University Hospital and James Cook University.

He has been involved in the development of Emergency Medicine training in multiple countries for over 20 years, initially in Australia and PNG, then Nepal, Fiji, Solomon Islands and more recently Vanuatu.

Assoc Prof Symmons has been involved in Emergency Medicine education during this time with teaching at many levels including medical students, community health workers, nurses, junior doctors and ED trainees and has been an examiner for emergency medicine training in Australia, PNG, Nepal and Fiji. He hopes to continue to be involved in Emergency Medicine training in the Pacific for many years to come.



4TH ANNUAL CONFERENCE

# VANUATU HEALTH RESEARCH SYMPOSIUM

12-13 OCTOBER 2023

**ACCEPTED FOR ORAL PRESENTATION**



## Abstract session 1: Disaster response

### Addressing Malnutrition in Post-Disaster Vanuatu: The Pikinini Pawa Biskit Initiative

Mr Kali Ameara

World Vision Vanuatu, Port Vila, Vanuatu. Fine Foods Ltd, Port Vila, Vanuatu

#### Abstract text

**Background:** Over 65% of Vanuatu's population relies on subsistence agriculture and faces significant risks of food shortages post-disasters. Events like cyclones, floods, and earthquakes jeopardise subsistence agriculture, escalating the risk of acute malnutrition among vulnerable children and adults. In the aftermath of such disasters, rapid identification and support with targeted nutritional supplements become paramount. This "Pikinini Pawa Biskit (PPB)" project is a locally sourced, commercially manufactured nutrition bar endorsed by the Vanuatu Ministry of Health (MOH). Initially piloted successfully under a previous grant, this initiative aims to address existing food insecurity and mitigate the nutritional impact of disasters on Vanuatu's most vulnerable.

**Methods:** The project promotes the use of the PPB for (1) Moderately malnourished (MAM) children at home; (2) Severely malnourished (SAM) children post-hospital treatment and (3) Vulnerable adults, especially the disabled and elderly, with nutritional deficits. In collaboration with MOH, following the impacts of Tropical Cyclones Judy and Kevin in March 2023, the project plans to distribute 10,000 packs of PPB to the carers of MAM children and vulnerable adults. Distribution of PPB will also be extended to other food programs focused on food safety and food pre-positioning for disaster.

**Results:** The PPB developed post-Tropical Cyclone Harold in 2020 was widely accepted and showed promising results in supporting SAM children to regain nutritional health. The project aims to further this success by partnering with Fine Foods, the only local manufacturer meeting the required production standards.

**Discussion:** The project emphasises the importance of a locally sourced solution, reducing dependency on overseas suppliers. It offers a sustainable, local solution to address malnutrition challenges in Vanuatu, especially in post-disaster scenarios. By aligning with the symposium's theme of "Health and Disaster - Response, Recovery, and Resilience," this initiative showcases a proactive approach to health and nutrition in Vanuatu.



## Understanding Malnutrition in Tanna after cyclone Judy and Kevin: A Cross Sectional Survey

Dr Geraldine Nimisa<sup>1</sup>, Dr Maeckely Tamata<sup>2</sup>, Mrs Becky Kalwatman<sup>3</sup>, Ms Marie-Cecile Tao<sup>2</sup>, Ms Jennifer Iniakwala<sup>2</sup>

<sup>1</sup>Vila Central Hospita, Port Vila, Vanuatu. <sup>2</sup>Lenakel Hospital, Lenakel Town, Vanuatu. <sup>3</sup>Lenakel Hospital, Lenakel, Vanuatu

### Abstract text

**Background:** Malnutrition remains a health concern among children in Tanna, despite ongoing efforts to address it. The evident increase of 147 admissions to Lenakel Hospital and 15 deaths due to malnutrition has prompted a need for survey among the general population. This abstract summarizes the findings of a cross sectional survey conducted to assess the prevalence of malnutrition in Tanna after cyclone Judy and Kevin

**Methods:** The study encompassed a cross-sectional survey of nutritional status among children from age 6months to 60months around Tanna, along with a tailored interview as an investigation into the socio-economic and cultural factors contributing to malnutrition. A random sample of 1268 were surveyed, ages 6 to 60 months, in seventy one communities and five health centres across Tanna using anthropometric measurements, demographics and a standard interview tailored toward assessing factors contributing to malnutrition.

**Results:** The results revealed a 4% prevalence of malnourished children in the surveyed population, and a 10% prevalence of underweight children with the risk of becoming malnourished. Furthermore the tailored interview to determining contributing factors ranked accordingly as; poor nutritional knowledge - 40%, early weaning of children - 30%, lack of access to health care - 15%, and lack of family support 10% among others as contributing factors to malnutrition respectively. Malnourished children surveyed were referred to Lenakel Hospital for admission.

**Discussion:** The survey highlights the prevalence of malnutrition and the components contributing to malnutrition in communities of Tanna. Children are more likely to be malnourished as mothers lack awareness of child nutrition, poor health accessibility, and poor family support among other components. Addressing the main contributing factors, the population can strive to improve the nutritional well being for children in Tanna and their future.





## Optimizing the Roles of Village Health Workers in Vanuatu: A Case Study

Mr Sael Fred<sup>1</sup>, Mrs Harriet Sam<sup>1</sup>, Dr Lhawang Ugyel<sup>2</sup>, Dr Eunyoung Ko<sup>3</sup>, Miss Deki -<sup>4</sup>, Miss Eunji Cho<sup>3</sup>

<sup>1</sup>Ministry of Health, Port Vila, Vanuatu. <sup>2</sup>UNSW Canberra, Canberra, Australia. <sup>3</sup>WHO, Port Vila, Vanuatu. <sup>4</sup>WHO, Suva, Fiji

### Abstract text

**Background:** Limited access to quality health services and human resource shortage remain challenges in Vanuatu. Village Health Workers (VHWs) are the sole care providers who contribute to strengthening primary health care at the community level through health promotion activities, and provision of basic health care in Vanuatu. In 2022-23, the Ministry of Health (MoH) with technical assistance from WHO conducted a study to review the existing VHW program and identified challenges.

**Methods:** The study involved mixed methods of interviews, focus group discussions and surveys as a case study, which were conducted between September 2022 and July 2023.

**Results:** We found three key issues with the implementation of the VHW program in Vanuatu: training, incentives, and coordination and management. First, VHWs are inadequately trained to carry out the responsibilities as per the Role Delineation Policy (MoH, 2018), particularly the roles in dispensing medicine and providing treatment. Furthermore, there is a lack of financial and non-financial incentives to attract VHWs to work at the aid posts. Limited career pathway retains VHWs in the same position for a long period. Lastly, although the coordination and supervision mechanism of the VHW program is clearly specified, major discrepancies are identified in the implementation.

**Discussions:** These findings highlight a need for effective reform which could address multiple challenges by prioritizing on development of the VHW training program. Rather than working on an entirely new curriculum, integrating existing training programs can be considered, which brings minimal disruptions and financial implications to the current health systems. The advanced training system could create a career path for VHWs along the lines of either nursing pathways or community development. The findings could potentially serve as a lesson learnt for conducting reviews in similar programs in terms of strategizing the development of community health programs and curricula in other countries.



## Navigating Cyclones and Crises: A cross-sectional observation on Mental Health Screening at nursing triage using K-10 post TC Judy & TC Kevin.

Dr Jimmy Obed<sup>1</sup>, Mr Craig Sionetuato<sup>2</sup>

<sup>1</sup>Vila Central Hospital, Port Vila, Vanuatu. <sup>2</sup>Pasifika Medical Association Group, Auckland, New Zealand

### Abstract text

**Background:** After the devastating twin cyclones in Vanuatu in March 1st and 3rd 2023, understanding the mental health of survivors became paramount. The Kessler-10 (K-10) tool, designed to measure psychological distress, including symptoms of anxiety and depression, was the readily available tool for this purpose. The K-10 was administered at the nursing triage for everyone that accessed medical care. The PMAG's multi-disciplinary Pacific Medical Assistance Team (PACMAT) and the MindCare Team were dispatched to Aniwa and Futuna to provide medical and mental health and psychosocial assistance.

**Methods:** Of the 418 patients who went through nursing triage for mental health screening, 84% (aged 16 years and above) underwent the K-10 screening. To cater to language barriers, the tool was also translated into Bislama. Local health professionals assisted in its administration, ensuring clarity and comprehension.

**Results:** The data revealed that 74% of participants scored below 20, suggesting mild distress. Conversely, a significant 26% scored above 25, indicating a higher degree of psychological distress, and were referred for in-depth review by a mental health nurse or psychiatrist.

**Discussion:** The substantial number of individuals with scores above 25 emphasizes the profound psychological impact of the cyclones. These individuals were immediately referred for more comprehensive evaluations. Mental health screening is a vital component of health screening during disaster medical responses. The absence of baseline data and subsequent studies points to areas of refinement in future disaster mental health strategies.



## Research Study on physical and mental impact of Displacement due to Ambae Manaro Vui Volcano Eruption

Dr Kelsey Dancause<sup>1</sup>, Dr Katie Olszowy<sup>1</sup>, Mrs Beverlyn Tosiro<sup>2</sup>, Mr Maxley Malanga<sup>3</sup>

<sup>1</sup>Binghamton University, New York, USA. <sup>2</sup>Godden Memorial Hospital, Port Vila, Vanuatu. <sup>3</sup>Ranmawot Dispensary, Port Vila, Vanuatu

### Abstract text

**Background:** The research was conducted to understand the impacts of Ambae Displacement due to Manaro Vui Volcano Eruption in 2018. The study was conducted on people living in Santo who did not return after evacuation and on people who returned to Ambae. The Researchers were Dr Kelsey Dancause from Canada and Dr Katie Olszowy from United States of America and Vanuatu were Beverlyn Tosiro and Maxley Malanga.

**Methods:** A Survey questionnaire were conducted with all participants to collect information on food and living conditions during displacement. Each participant was screened for any non -communicable Diseases. Hair Samples were collected from participants who consented for their hair to be collected, to test stress hormone levels

**Results:** There was high levels of Elevated Blood Pressure on both islands. Men were more likely to have high blood pressure than Women. People living in Santo were more likely to have high blood pressure than people living on Ambae. Women were more likely to be more obese than man. People on Santo were more likely to be more obese than people on Ambae. Slightly higher levels of stress in Women than men. Slightly higher levels of stress on Ambae than Santo. On Santo, Cortisol level in people in Santo was 22% higher in Men than Women. This was very interesting because women reported that they felt more stress than men but their cortisol level was lower than men. People who had positive mental outlook also had lower cortisol levels

**Discussion:** Stress can increase risk of Non Communicable Disease and Depression and talk to Doctor or Nurse. It is important to talk to professionals about stress to get appropriate support in a timely manner.



## The Use Of Technology In Clinical Service Delivery During Natural Disasters. An Endoscopy Case Study At Vila Central Hospital, 2023.

Dr Sale Tamata Vurobaravu

VILA CENTRAL HOSPITAL, PORT VILA, Vanuatu

### Abstract text

**Background:** Health care workers rely heavily on face-to-face interactions with patients to make clinical decision. In Vanuatu, as in many low resource settings, patient information is stored in hard copy records. During times of disaster, patient information may be difficult to access and patient files may become damaged. A low-cost and low-tech solution is urgently needed to collect patient information. The objective of this project was to implement a low-cost and low-tech solution to efficiently provide specialist health services in Vanuatu.

**Methods:** A pre-planned visiting gastroenterology team was sent to Vanuatu by the New Zealand Medical Treatment Scheme. Patient enrollment via conventional referral channels was very low. In order to increase patient enrollment, the specialist team made a public request via Facebook to identify people with gastrointestinal symptoms. These people reached out on Facebook Messenger and were sent a link to an online questionnaire which was filled, and resultant information analyzed. Priority patients were subsequently invited for face to face clinic, were prepped for endoscopy and had endoscopy

**Results:** Between August 15 2023 and September 4 2023, 57 people responded via Facebook messenger and completed the online questionnaire. Patients were then prioritized for urgency of procedure and invited for face-to-face assessment. Pre-operative work up of these patients was conducted. Patients were given appointments to the operating theatre and a total of 38 endoscopies were performed.

**Discussion:** Low-tech and low cost technology such as smart phones & Facebook & Google can be utilized to recruit patients for a myriad of health purposes ( clinical, surveillance). During a disaster where patient information is inaccessible & there are frequently changing health needs (i.e: acute trauma, outbreaks, malnutrition), this technology can rapidly assist in the provision of service delivery.



## Abstract session 2: Clinical medicine

### Short term clinical outcome of Peritoneal dialysis patients at Vila Central Hospital: A Retrospective Cohort study.

Dr Emma Kalterikia<sup>1</sup>, Dr Minado Paul<sup>1</sup>, Dr Richard Leona<sup>2</sup>

<sup>1</sup>Medical Unit/VCH, Port Vila, Vanuatu. <sup>2</sup>Surgical Unit/VCH, Port Vila, Vanuatu

#### Abstract text

**Background:** Peritoneal dialysis (PD) is a renal replacement therapy that infuses a sterile solution into the peritoneal cavity and uses the peritoneal membrane as the exchange surface to remove waste products. Prior to 2020, patients requiring dialysis were sent overseas. However, due to border closures in response to COVID-19 in 2020, overseas referral was not possible. A trained local urologist initiated in country PD for those that required urgent PD. The purpose of this study is to evaluate the clinical outcome and complications of PD within three months.

**Methods:** This is a retrospective cohort study examining PD cases at VCH. The medical records of all patients who had PD inserted from 01/01/2021-10/7/2023 were collected. The follow up time period was three months after insertion. Data were collected and analyzed focusing on the demographics, co-morbidities, and clinical outcomes. Clinical outcomes were measured by recorded fluid overload status and creatinine levels.

**Results:** 12 PD were performed in Vanuatu since 2021. Data was available for 10 cases. 80% of cases were Male, mean age 57 years. Outcome data is pending for three cases. Average length of admission after insertion was 24 days. Creatinine clearance within two days of PD decreased by 10% and 67% had improvement in their fluid overload status. 67% developed electrolyte imbalances. Four died within 3 months; two died during their first admission and two died during readmission with complications of Peritonitis.

**Discussion:** Initiating PD in ESKD patients showed an improvement in kidney function and decrease in fluid status. However, there was a high mortality rate for the first and second admissions. Comparison to overseas mortality rates following PD is recommended to accurately assess the impact of PD introduction in Vanuatu. PD may be best suited as a tool for stabilizing patients prior to referral overseas for specialist service.



## Outcomes of ventilated Guillain Barre Syndrome (GBS) patients at Vila Central Hospital intensive care unit (ICU)-An experience from a tertiary hospital in Vanuatu.

Dr Minado Paul

Vila Central Hospital, Port Vila, Vanuatu

### Abstract text

**Background:** GBS is an autoimmune demyelinating disease often as a sequelae acute diarrheal or flu-like illness that can lead to severe neuromuscular weakness requiring mechanical ventilation, prolonged hospital stay and sometimes death. The care of GBS at the Vila Central Hospital (VCH) ICU with its limited bed and staff capacity puts a strain on intensive care services. The objectives were: (1) To describe the prevalence of GBS admissions at VCH. (2) To describe the demographic and clinical characteristics of GBS patients ventilated at the VCH ICU. (3) To determine factors that may affect patient outcomes.

**Methods:** This was a retrospective descriptive study of patients admitted at the VCH for GBS since 2012. Participants were all patients ever admitted at the VCH ICU for GBS. Information was collected from patient folders, ward registers and patient information system and analyzed on excel.

**Results:** A total of 20 cases were identified to have been diagnosed with GBS at the VCH. 12 were females and 8 were males. 52% were ventilated. Mechanical ventilation was commenced within 2 days of arrival to VCH. The average length of stay in hospital for ventilated patients was 115 days. The average length of stay in ICU was 58 days. The average time patients spent on a ventilator was 40 days. 3 patients died in hospital one of which was mechanically ventilated. 2 patients have died since their discharge.

**Discussion:** GBS is a relatively rare condition but with a disproportionate burden on intensive care services. To ensure equity of patient care there is a need to: 1. Establish eligibility criteria for ICU admissions. 2. Expand and improve ICU services in Vanuatu.



## Baseline Antimicrobial Use Point Prevalence Survey at Goroka Provincial Hospital in Papua New Guinea: Findings and Implications

Mr Obert Sam<sup>1</sup>, Mr Mona Kheng<sup>2</sup>, Dr Victor Musyoki<sup>2</sup>, Ms Ella Noho<sup>1</sup>, Mr Watson Toroi<sup>1</sup>, Dr Josephine Chanoan<sup>1</sup>, Ms Kaba Ula<sup>2</sup>, Dr Amrita Ronnachit<sup>2</sup>, Ms Marjorie Elijah<sup>3</sup>, Dr Kapiro Kendaura<sup>1</sup>

<sup>1</sup>Goroka Provincial Hospital, Eastern Highlands Province, Papua New Guinea. <sup>2</sup>Burnet Institute, Melbourne, Australia. <sup>3</sup>PNG National Department of Health, Port Moresby, Papua New Guinea

### Abstract text

**Background:** Inappropriate antimicrobial prescribing can potentially lead to the spread of antimicrobial resistance, numerous adverse effects, and increased healthcare costs. We conducted a baseline antimicrobial use point prevalence survey (AMU PPS) in Goroka Provincial Hospital (GPH) to estimate the prevalence of antimicrobial use and assess antimicrobial prescribing practices.

**Methods:** A cross sectional PPS was conducted across all inpatient wards in GPH. Patient data on antimicrobial use was extracted from medical records using the AMU PPS tool adapted from the Hospital National Antimicrobial Prescribing Survey (NAPS). NAPS database was used for data entry and validation. All statistical analyses were performed by using SPSS Version 26.

**Results:** Among the patients surveyed, 126 out of 220 (57.3%) were prescribed antimicrobials. There was a total of 233 antimicrobial prescriptions among which 45.9% (n=107) were compliant with the treatment guidelines, 11.6% (n=27) did not comply, 0.9% (n=2) were for directed therapy, and 41.6% (n=98) were not assessable. Compliance with the treatment guidelines was significantly associated with the indication for antimicrobial use (<0.05). 63.9% (n=149) of indications were documented while only 7.3% (n=17) had review or stop date documented. The documentation of indications significantly varied with age (<0.05). The percentage of surgical prophylaxis given for greater than 24 hours was 62.5% (n=10 out of 16). Overall, 57.1% (n=133) of the prescriptions were deemed to be appropriate, 28.8% (n=67) inappropriate, and 14.2% (n=33) not assessable. Gender was significantly associated with indication for the antimicrobial use (<0.05).

**Discussion:** Performing an AMU PPS can provide valuable insight into antimicrobial prescribing practices in the hospital, revealing specific areas to direct antimicrobial stewardship (AMS) efforts. GPH identified the priority areas to be addressed including the availability of treatment guidelines, microbiology laboratory utilization, documentation of indication and review or stop date, surgical antibiotic surgical prophylaxis.



## Antimicrobial resistance of blood culture isolates from patients attending Goroka Provincial Hospital, Papua New Guinea

Mr Watson Toroi<sup>1</sup>, Dr Victor Musyoki<sup>2</sup>, Ms Becky Max<sup>1</sup>, Mr Mona Kheng<sup>2</sup>, Dr Chani Kudakwashe<sup>2</sup>, Dr Amrita Ronnachit<sup>2</sup>, Dr Josephine Chanoan<sup>1</sup>

<sup>1</sup>Goroka Provincial Hospital, Goroka, Papua New Guinea. <sup>2</sup>Burnet Institute, Melbourne, Australia

### Abstract text

**Background:** Bloodstream infection (BSI) due to antibiotic-resistant bacteria remains a global healthcare concern. Little information is available in Pacific Island countries, including Papua New Guinea. Blood culture-based antimicrobial resistance surveillance of BSI in patients receiving clinical care at Goroka Provincial Hospital, Papua New Guinea has been introduced with support from Fleming Fund Country Grant.

**Methods:** We analysed demographic, clinical, and bacterial identification and antimicrobial susceptibility testing data from blood specimen collected between April 2022 and July 2023. Data were retrieved from the Senaite Laboratory Information Management System and analysed using WHONET and R statistical software.

**Results:** Among the 1,276 patients screened for BSI, 51% (646) were male, and the median age was 19 years (IQR 6-33). Out of the total (n = 1276) blood specimens processed, 141 (11%) were positive for bacterial pathogens. *Salmonella enterica* serovar Typhi (72, 51%) and Methicillin-resistant *Staphylococcus aureus* (14, 10%) were the most frequently isolated bacteria and showed high susceptibility to conventional first-line antibiotics (93–100%). *Salmonella* Typhi isolates (43%) were resistant to chloramphenicol. Patients with *S. Typhi* did not differ significantly in age compared to patients presenting with BSI as a result of other bacteria, including MRSA ( $p>0.05$ ). However, the isolation rate of *S. Typhi* and MRSA was significantly high in the paediatric ward (93%) and the emergency ward (15%), respectively ( $p<0.05$ ).

**Discussion:** *Salmonella enterica* serovar Typhi, resistant to chloramphenicol, was the predominant cause of bloodstream infection, especially among infants and children <10 years of age, posing a threat to patient management. There is a need for routine surveillance to monitor the spread of these resistant strains.





## A Situational Analysis of Surgical Care Capacity in Vanuatu

Dr Margaret Lehi<sup>1</sup>, Dr Meghan Lim<sup>2</sup>, Dr Rennie Qin<sup>2</sup>, Dr Kee Park<sup>2</sup>, Dr Elizabeth Mcleod<sup>3</sup>, Dr Basil Leodoro<sup>4,5</sup>, Dr Lawrence Boe<sup>6,1</sup>, Dr Phil Temakon<sup>7,1</sup>, Dr Nilani Tari<sup>8,1</sup>, Dr Randy Vagaha<sup>1</sup>

<sup>1</sup>Ministry of Health, Port Vila, Vanuatu. <sup>2</sup>Program in Global Surgery and Social Change, Harvard Medical School, Boston, USA. <sup>3</sup>Royal Australasian College of Surgeons, Victoria, Australia. <sup>4</sup>Respond Global, Port Vila, Vanuatu.

<sup>5</sup>Northern Provincial Hospital, Luganville, Vanuatu. <sup>6</sup>Godden Memorial Hospital, Ambae Island, Vanuatu. <sup>7</sup>Norsup Hospital, Malekula Island, Vanuatu. <sup>8</sup>Lenakel Hospital, Tanna Island, Vanuatu

### Abstract text

**Background:** Worldwide, 5 billion people lack access to safe, timely, and affordable surgical care; nine out of ten of them live in low- and middle-income countries. In 2015, the Lancet Commission on Global Surgery (LcoGS) recommended the development of National Surgical, Obstetric, and Anaesthesia Plans (NSOAPs) as a comprehensive and coordinated road-map towards surgical system strengthening. Vanuatu as well as other Pacific island countries do face unique challenges in providing surgical care. This study assessed the surgical care capacity in our health facilities around the country to inform the development of National Surgical Obstetrics and Anesthesia Plan that is contextualized to our setting.

**Methods:** Mixed method cross-sectional observational study. A baseline situational analysis consisting of quantitative facility assessments of six main health facilities and qualitative key stakeholder interviews conducted to inform strategic health planning and policy making. This study used validated WHO-PGSSC facility assessment and stakeholder interview tools.

**Results:** There are 6 provincial hospitals, 2 of them are referral hospitals containing four functional theatres with a surgical volume of 863/100,000 population with in-hospital perioperative mortality rate < 1%. Significant proportion do not lie within the 2 hour access to any health facility providing at least 3 bellwether procedures. Vila central hospital is the only facility that is capable to provide 3 Bellwether procedures. Surgical Anesthesia Obstetrics specialist density is 5.35 / 100,000 which is below recommended 20 / 100,000 by LcoGS. The average Out of Pocket Expenditure for Bellwether procedures is less than 24,000 vt. Bulk of Out of Pocket expenditure is for transport and Lodging.

**Discussion:** Bulk of Surgical procedures are done in the referral hospitals with common challenges faced in 3 other provinces around service deliveries, system inputs and processes that needs to be strengthened to ensure surgical services are timely available, accessible, affordable to our population in our provinces.



## Descriptive Analysis of Surgical Site Infections Following Caesarean Sections in a One- Year Period at Vila Central Hospital.

Mr Gilson Fangaria<sup>1</sup>, Mr Graham Tasso<sup>1</sup>, Mr Philip Agwaiasi<sup>1</sup>, Dr Caroline Van Gemert<sup>2</sup>

<sup>1</sup>Vila Central Hospital, Port Vila, Vanuatu. <sup>2</sup>Burnet Institute, Port Vila, Vanuatu

### Abstract text

**Background:** Surgical site infections (SSI's) following caesarean sections are significant concern in healthcare. SSIs are common in low- and middle-income countries, with an estimated one-in-ten people undergoing surgery developing an SSI resulting in morbidity, extended hospital stays, increased health-care costs, or mortality. This study aims to describe SSIs following caesarean section among patients at Vila Central Hospital (VCH) to enhance our understanding of SSI incidence and associated risk factors, allowing for more targeted prevention efforts and improved patient outcomes.

**Methods:** A retrospective descriptive method was used, involving analysis of patients records at VCH from August 2022 to August 2023. Data related to caesarean section cases were collected using SPC- standardized surveillance data tools . SSI is an infection that occurs in the area where surgical procedure was performed. Data collected included patient demographics, comorbidities occurrence of SSI, timing of SSI and details of antibiotic prophylaxis. Data was entered in an excel spread sheet and analysed. SSI incidence was calculated as the proportion of all caesarean section cases resulting in SSI.

**Results:** Among 270 caesarean sections in the study period, a total of 31 SSI were reported (SSI incidence rate of 11.5%). Among these cases, 65% were obese with 16% overweight. When compared to the first week after surgery, majority of SSI cases occurred after 8 days. On prophylaxis treatment, 95% cases comply to antibiotic treatment guideline and 5% not as per guideline.

**Conclusion:** This descriptive study provides a comprehensive profile of SSIs following Caesarean sections at VCH over one year period. The findings underscore the importance of targeted prevention efforts and enhanced patient care practices. Though it does not establish casual relationships, it served as a foundation for future research and quality improvement efforts.



## Abstract session 3: Tropical medicine and health

### Cross sectional analysis of knowledge about tuberculosis among previous tuberculosis cases and contacts in high-incidence areas of Vanuatu, 2023

Ms Leila Bell, Mr Saen Fanai, Mrs Renata Amos

MOH, Port Vila, Vanuatu

#### Abstract text

**Background:** In Vanuatu, an average of 90 cases of tuberculosis were reported annually between 2016 and 2020, many from the same geographic areas or from families with previous cases. There remain delays in seeking care by TB cases. There is a need to identify gaps in understanding that can be addressed to encourage timely presentation to healthcare facilities.

**Methods:** Two area councils per province with the highest number of TB cases diagnosed from 2018-2022 were identified. Five contacts were also targeted for interviews based on contact estimates. Informed consent was sought and an oral survey was conducted in Bislama or the local language by a trained officer. A total knowledge score was calculated. If an answer was partially right, half points were given and if no answer was given this was counted as incorrect. Mean and standard distribution were calculated. Univariate analysis was done to determine predictors of knowledge scores for cases and contacts separately.

**Results:** A total of 761 participants were interviewed, including 139 cases and 622 contacts from all provinces, which was 62.6% of target cases (range: 16.7% - 100%) and 56.0% of targeted contacts (range: 13.3% - 145%). The mean knowledge score was 66.7% for cases compared with 55.3% for contacts ( $p < 0.05$ ). For cases no demographic factors had significant association with knowledge score. For cases, there were significant association with age group, education, and province.

**Discussion:** These results show that knowledge levels among previous TB cases and contacts are relatively low. Additionally, tailored education programmes are needed to specifically target different populations. There is a need to improve awareness and knowledge of TB to improve timely presentation to healthcare facilities for new cases.



## Tuberculosis in Tanna: A Cross Sectional Survey From January To September of 2023

Dr Maeckely Tamata, Mr Kevin Carter, Mrs Sarah Nalawas  
Lenakel Hospital, Lenakel, Vanuatu

### Abstract text

**Background:** Tuberculosis continues to be an epidemic to Tanna Island, despite the efforts to address it. This abstract summarizes a study done from the Provincial Tuberculosis laboratory registry to find the prevalence of tuberculosis in Tanna from January to September of 2023.

**Methods:** With efforts to diagnose and treat Tuberculosis, sputum samples are collected from subjects with clinical signs of TB, or samples for TB contact tracing. 300 subjects were identified, tested, and recorded along with their demographics and the outcome. Recorded findings only show the prevalence of Tuberculosis in Tanna from January to September 2023.

**Results:** From 300 samples, 62% were female, 48% were male. 7% of them were <10 years. 31% were >50years and the latter 62% were in-between. From 300 sputum tests, there was a prevalence of 32 positive cases from January to September of 2023. 3 of these 32 positive cases were <10years, 4 of which were >50years old, and a significant 25 people were in-between. Tuberculosis prevailed highest in the month April with 10 cases altogether. Of the 32 positive cases, only 3 were previously diagnosed TB patients, and a finding of one newly diagnosed MDR-RR. The prevalence of tuberculosis was most prominent in the humid areas of South West Tanna and Central Tanna where traditional customs were maintained and non-compliance to medication was common.

**Discussion:** Despite efforts to reduce Tuberculosis in Tanna, this abstract shows that it is still a health concern in Tanna. The vulnerable age groups were less affected by tuberculosis and the less vulnerable were more susceptible because of their higher commuting rates and participate gathering more. The more concerning fact was that there was a newly diagnosed MDR case which speaks volumes. More effort must be put into addressing the multifaceted challenge or the challenge may spiral out of control.



## Strengthening vector-bone disease surveillance and utilisation of data for decision making in Papua New Guinea

Ms Annie Dori<sup>1</sup>, Mrs Alexa Murray<sup>2</sup>, Ms Rachael Farquhar<sup>2</sup>, Mr Samuel McEwen<sup>3</sup>, Ms Diana Timbi<sup>4</sup>, Mr Zebedee Kerry<sup>4</sup>, Ms Marie Elliot<sup>4</sup>, Mr Willie Porau<sup>5</sup>, Dr Willie Pomat<sup>4</sup>, Dr Leo Makita<sup>6</sup>, Dr Nakapi Tefuarani<sup>7</sup>, Dr Alyssa Barry<sup>2,8</sup>, Dr Leanne Robinson<sup>2,4</sup>, Dr Moses Laman<sup>4</sup>, Dr Stephan Karl<sup>9</sup>

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### Abstract text

**Background:** STRIVE PNG is a partnership-based implementation research and surveillance strengthening project that pilots a sentinel surveillance system integrating real-time febrile illness surveillance with molecular diagnostic, entomological data and stock supply management in Papua New Guinea (PNG). Strengthening surveillance and implementation research capacity remains a high priority in PNG to ensure the National Malaria Control Program (NMCP) and Sub-national partners are enabled to make evidence-based decisions locally.

**Methods:** Febrile illness case data, dried blood spots for molecular diagnostic and genomic analysis for malaria and arboviral infections, including drug resistance markers, was collected alongside vector surveillance data utilizing the STRIVE-Tupaia geo-spatial online platform to aggregate and visualise data. A case study on the sentinel surveillance system and summary findings from 4 years of systems operations will be presented.

**Results:** A partnership-based approach has resulted in strengthened VBD (vector borne diseases) partnerships and the establishment of eight sentinel sites across strategically selected provinces.

**Discussion:** Successful establishment of sentinel surveillance activities has allowed decision makers to access real-time febrile illness surveillance data. STRIVE PNG provides evidence to further shape policy recommendations in the use and uptake of real-time electronic surveillance systems.



## Abstract session 4: One health

### Challenges and opportunities in promoting the rational use of antimicrobials in animal health sector in Papua New Guinea.

Mr Daniel Kelly<sup>1</sup>, Mr Mona Kheng<sup>2</sup>, Ms Paula Pupune<sup>2</sup>, Dr Amrita Ronnachit<sup>3</sup>, Dr Victor Musyoki<sup>2</sup>, Dr Ilagi Puana<sup>1</sup>

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#### Abstract text

**Background:** In 2016, Papua New Guinea (PNG) conducted a country situation analysis to identify gaps in addressing antimicrobial resistance (AMR). Low engagement among stakeholders and inappropriate use of antimicrobials across all sectors were reported as major challenges. Creating an opportunity for the health, agriculture, and environment sectors to jointly develop a National Action Plan (NAP) on AMR. A “One Health” approach was used to implement and advocate for improvement in the rational use of antimicrobial agents across all sectors. Here, we highlight the challenges, opportunities, and propose strategies to promote the rational use of antimicrobials in PNG.

**Methods:** An implementation review of activities in the NAP to promote the rational use of antimicrobials was conducted by key stakeholders in 2021 and 2022. Challenges and opportunities were identified, and a SWOT analysis undertaken.

**Results:** All strategic activities in the NAP to promote the rational use of antimicrobials in animal health were reviewed. Among the strategic activities reviewed, six key factors were identified as challenges associated with promoting the rational use of antimicrobials in animal health. These included rudimentary governance structures, limited diagnostic and surveillance laboratory capacity, a lack of human and financial resources to provide oversight of rational use of antimicrobials at all levels, national antimicrobial policy and regulation, national veterinary treatment and IPC guidelines, and a lack of a robust surveillance system for AMR and antimicrobial use. Major opportunities identified were political commitment and collaborations with available local and international partners to promote technical and financial investment.

**Discussion:** Rudimentary governance systems and low engagement and commitment among stakeholders are the key implementation challenges in promoting rational use of antimicrobials in animal health. Political commitment and collaborations with local and international partners can facilitate implementation. We recommend strengthening government systems through political and partner collaborations, engagement, and commitment.



## Investigating Leptospirosis on Efate Island in 2023 through a One Health approach.

Ms Joanne Mariasua<sup>1</sup>, Mrs Lola Sammy<sup>1</sup>, Dr Graham Patas<sup>2</sup>, Dr Roman Thibeaux<sup>3</sup>, Dr Philippe Guyant<sup>4</sup>

<sup>1</sup>Ministry of Health, Port Vila, Vanuatu. <sup>2</sup>Shefa Health, Port Vila, Vanuatu. <sup>3</sup>Institut Pasteur de Nouvelle-Calédonie, Noumea, New-Caledonia. <sup>4</sup>World Health Organization, Port Vila, Vanuatu

### Abstract text

**Background:** A surge in Leptospirosis cases occurred in Vanuatu after Tropical cyclones Judy and Kevin in March 2023, impacting people of all ages. Leptospirosis is caused by pathogenic *Leptospira* bacteria, transmitted through contact with water or soil contaminated by infected animal urine. Symptoms can range from fever and headache to organ failure if not treated. The increase in cases was due to heightened exposure to the bacteria in the environment, worsened by heavy rainfall. The investigation aimed to gather data and insights to understand the transmission of Leptospirosis and develop preventative measures to safeguard public health.

**Methods:** A multidisciplinary team, comprising various departments and organizations, conducted a field investigation to study the link between the environment, animals, and the transmission of Leptospirosis to humans. They collected samples from 16 sites, including soil, water, and animal samples, to analyze the presence of the pathogen.

**Results:** Field investigation found pathogenic *Leptospira* at 13 of 16 sites. Molecular analysis detected it in 24 of 50 samples. *Leptospira*-specific antibodies were found in 3 pig samples. Additionally, 5 cattle kidney swab were negative while one cattle tested positive with flying fox kidney swab indicated chronic carrier status.

**Discussion:** The field investigation and molecular analysis revealed a widespread occurrence of *Leptospira* in the study area, highlighting the potential risks it poses to humans and animals. The pathogen was found in soil and water samples during the field investigation, emphasizing the need to control its spread. Molecular analysis confirmed the presence of pathogenic *Leptospira* in various samples, further supporting its active circulation in the study area. Pigs were found to have *Leptospira*-specific antibodies, suggesting their potential role as contributors to transmission. Cattle and flying foxes were also identified as potential sources of transmission. Effective measures, including monitoring and surveillance of reservoirs, are necessary to manage the disease.



## Drug sensitive and resistant tuberculosis and zoonotic infections as causes of lymphadenitis, Papua New Guinea

Dr Jane Greig<sup>1</sup>, Ms Nomin-Dora Tenakanai<sup>2</sup>, Ms Dorish Walsh<sup>2</sup>, Mr John-Paul Matlam<sup>3</sup>, Ms Maria Globan<sup>4</sup>, Ms April Holmes<sup>1</sup>, Dr Joe Norrie<sup>5</sup>, Dr Josephine Chanoan<sup>6</sup>, Mr Watson Toroi<sup>7</sup>, Dr Kari Seki<sup>5</sup>, Dr Chris Ope<sup>7</sup>, Dr Rendi Moke<sup>5</sup>, Dr Jacklyn Joseph<sup>5</sup>, Dr Philipp du Cros<sup>1</sup>, Dr Janet Gare<sup>3</sup>

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### Abstract text

**Background:** Papua New Guinea (PNG) is one of 30 high TB burden countries - estimated incidence 432/100,000; multi-drug resistant (MDR-TB) incidence 23/100,000. The proportion of extra-pulmonary TB (EPTB) is relatively high (~42%); most is TB lymphadenitis (TB-LN) in children. EPTB is infrequently bacteriologically confirmed. *Mycobacterium bovis* has been associated with higher proportions of TB-LN. In three PNG provinces we aimed to determine proportions of presumptive TB-LN attributable to *Mycobacterium tuberculosis* complex (MTBC) and specifically *M. bovis*.

**Methods:** We aimed to enrol consecutive patients with clinically presumptive TB-LN, evaluate, and offer fine needle aspirate (FNA) of enlarged LN. Samples were assessed by cytology, Xpert MTB/RIF or Ultra, and culture with drug susceptibility testing.

**Results:** Among 223 participants with a bacteriology result: 60% female, median age 20 years (IQR 10-32), 45% lived in rural settings, 91% were BCG vaccinated, 21% had a previous TB diagnosis (61% EPTB) and 45% had close contact with someone with TB in the last 2 years. Most common symptoms were persistent enlarged LN (100%), fever/night sweats (48%), weight loss (46%); 6% of participants also had presumptive pulmonary TB. Laboratory test results on LN-FNA: 36% cytology consistent with TB, 26% Xpert MTB positive, 17% culture positive *M. tuberculosis*, 0 culture positive *M. bovis*. Of bacteriological MTBC positives (27%), 12% (7/58) were rifampicin resistant (RR). Cytology diagnosed five cancers. Bacteriological confirmation of TB was associated with visible LN 5-10cm on both sides of the neck, enlarged for at least 8 weeks, in people age  $\geq 15$  years.

**Discussion:** LN-FNA of LN with appropriate characteristics is important to verify clinical diagnosis of presumptive TB-LN. RR-TB in 12% of MTBC positives highlights bacteriological testing is crucial to inform correct treatment decisions. Cytology can support TB or alternative diagnoses. We found no evidence of zoonotic TB (*M. bovis*) contributing to the high EPTB proportion.





## Targeted sero-surveillance for infectious zoonoses in cattle

Mr Ian Peebles<sup>1</sup>, Ms Chelsea Simo<sup>2</sup>, Ms Saravina Matan<sup>2</sup>, Ms Kristeva Berukilukilu<sup>2</sup>

<sup>1</sup>Dept. of Biosecurity, Port Vila, Vanuatu. <sup>2</sup>Dept. of Livestock, Port Vila, Vanuatu

### Abstract text

**Background:** Infectious zoonoses from domestic livestock can present a significant public health risk for livestock sector workers including primary producers, stockmen, animal health workers and abattoir workers. A total of 436 sera were collected from beef cattle from 4 farms on the island of Efate and tested for serological evidence of two zoonoses, brucellosis (*Brucella* spp.) and Q-fever (*Coxiella burneti*). Vanuatu has been historically free of bovine brucellosis since 1994; historical serological data for Q-fever in livestock in Vanuatu are not immediately available to the authors.

**Methods:** Blood samples were collected in 10ml red-top (no anticoagulant) vacutainer tubes from clinically healthy adult cattle. Serum was extracted from clotted blood samples, placed into 2ml cryovac tubes and frozen at -20C. Frozen sera were packaged as per International Air Transport Association requirements and despatched to Wallaceville Animal Health Laboratory, New Zealand. Q-fever antibody testing was conducted using IDEXX Q-fever Ab enzyme linked immunosorbent assay (ELISA) kits; brucellosis testing was conducted using SVANOVIR *Brucella abortus* competitive ELISA Ab kits.

**Results:** All 436 sera tested for brucellosis gave negative results. For Q-fever, 23 samples (5.3%) were sero-positive, with a further 29 samples (6.7%) classified as borderline (suspicious).

**Discussion:** Active eradication of bovine brucellosis and bovine tuberculosis was conducted in the 1980s in Vanuatu, with subsequent freedom from both diseases being declared in 1994. The sero-surveillance results presented for brucellosis, while not comprehensive, are consistent with Vanuatu maintaining freedom from bovine brucellosis. Sero-positive results for Q-fever indicate that Q-fever is present at a low prevalence in cattle herds in Vanuatu. Further sero-surveillance is required in susceptible livestock species (cattle, sheep, goats) to determine the distribution and prevalence of Q-fever in livestock in Vanuatu. Obtaining further serological data for Q-fever will be important to assess the potential public health risk presented by this zoonosis.



## Abstract Session 5: Vulnerable populations

### Hepatitis B testing coverage at Vila Central Hospital laboratory among pregnant women attending antenatal clinics, Efate, 2018 – 2021

Miss Rubby Leiwia Dick<sup>1</sup>, Dr Caroline van Gemert<sup>2</sup>, Mr Junior George Pakoa<sup>1</sup>, Dr Sereana Natuman<sup>3</sup>, Ms Leila Bell<sup>3</sup>, Ms Kaylene Kalmos<sup>3</sup>

<sup>1</sup>Vila Central Hospital Laboratory, Port Vila, Vanuatu. <sup>2</sup>Burnet institute, Port Vila, Vanuatu. <sup>3</sup>Ministry of Health, Port Vila, Vanuatu

#### Abstract text

**Background:** Hepatitis B is transmitted through contact with blood or other body fluids, with mother-to-child transmission the most common route of transmission. Vanuatu policy includes hepatitis B screening in the first antenatal care visit (ANC-1). This study aims to assess hepatitis B screening and percentage positive among women seeking antenatal services on Efate.

**Methods:** This was a cross-sectional study using routinely collected administrative data. Outcome measures were (1) pregnant women presenting for ANC-1 and had a hepatitis B screening test at VCH laboratory. (2) Pregnant women presenting for ANC-1 that were hepatitis B positive. Data for 2018 to 2021 were included; data for 2022 were obtained but not included due to validity issues.

**Results:** The annual number of ANC-1 visits on Efate remained stable between 3200 to 3400 from 2018 to 2021, with an average of 3370 per year. The screening coverage decreased from 86% in 2019 to 81% in 2021. VCH-ANC provides approximately 70% of all ANC-1 care, whilst other sites contributed less than 30% of the total ANC-1 visits. The total number of HBsAg screening tests performed for ANC-1 pregnant women between 2018 and 2021 was 10,868, from which 706 were reactive (6%). Yearly, percentage positive remained stable at 7% between 2018 and 2020, and in 2021 decreased to 5%.

**Discussion:** In 2021 testing coverage reduced by 6%. In 2022 the number of pregnant women screened for hepatitis B also decreased. This decrease is due to the introduction of the decentralisation policy, which included decentralization of ANC-1 services to community health facilities. Laboratory services were not decentralized, which may have influenced access to hepatitis B testing. The decrease in positivity is most likely due to vaccine-derived immunity. It is recommended that hepatitis B screening is also decentralised to community-based health facilities.

### Progress and opportunities: menstrual health policy, service delivery and evidence in East Asia Pacific and Vanuatu



Miss Chelsea Huggett<sup>1</sup>, Dr Julie Hennegan<sup>2</sup>, Ms Ali Head<sup>2</sup>, Ms Brooke Yamakoshi<sup>3</sup>, Ms Heather Suttor<sup>2</sup>, Ms Pisey Chea<sup>4</sup>

<sup>1</sup>WaterAid, Melbourne, Australia. <sup>2</sup>Burnet Institute, Melbourne, Australia. <sup>3</sup>UNICEF, Bangkok, Thailand. <sup>4</sup>consultant, Melbourne, Australia

### Abstract text

**Background:** The menstrual health needs of thousands of girls, women and people who menstruate in the Pacific region go unmet. People who menstruate experience restrictions on their mobility, choices, and participation in school and community life. UNICEF, the Burnet Institute and WaterAid undertook a review across 19 East Asia Pacific countries, including 6 Pacific Island Countries (PICs), to assess progress in menstrual health-related policies, service delivery, and evidence between 2016 and 2022.

**Methods:** A desk review analysed health, gender equality, education, WASH, environment, and disaster-risk reduction policies in 6 PICs. Stakeholders participated in an informant survey to document policy and programming, while over 50 key informant interviews (five from Vanuatu) provided perspectives on progress, enablers, and barriers. A systematic review of academic and grey literature detailed extant evidence for the effectiveness of menstrual health interventions.

**Results:** Across the Pacific the review identified positive progress on two areas: access to information and education on menstruation; and access to materials, facilities and services. All 6 countries had menstrual health in WASH in Schools, with Vanuatu progressing menstrual health in four policy areas: WASH, education, disability and health. While these growing policy commitments were positive, the review across the Pacific found progress was impeded by limited implementation arrangements and budget allocation. Eighteen eligible studies were included in the regional systematic review, with most evaluating the knowledge gains achieved by education interventions but failing to assess broader outcomes. Rigorous evidence is urgently needed to understand the effectiveness of menstrual health interventions.

**Discussion:** The review calls for greater attention to neglected menstrual health needs including pain and stigma surrounding menstruation. In Vanuatu, menstrual health embedded in policies, strategies and guidelines require clearer institutional arrangements, funding, and capacity strengthening investment to translate to better services for girls and women.



## No more Leaks – Innovative ways to manage incontinence during and after a disaster.

Ms Allison Coleman

World Vision Vanuatu, Port Vila, Vanuatu

### Abstract text

**Background:** Incontinence is a prevalent health issue affecting approximately one quarter of our total population and is commonly intensified during and after stressful events such as natural disasters. Whilst Vanuatu experiences frequent natural disasters, incontinence management is often ignored during disaster planning and response efforts. The Vanuatu Water, Women & Disability Study conducted by World Vision and key partners, discovered that 29% of people experience incontinence and 33% of people with disabilities experience urinary or fecal incontinence at least 3 times per week. 50% of these had no knowledge of, or access to, products to help safely manage incontinence. This led to unsafe practices such as restricting food, water and social interaction including disaster evacuation due to fear of leaks, resulting in harassment or abuse.

**Methods:** The Leftemap Laef Program, delivered in partnership between World Vision, Provincial Health and Village Health Workers (VHW's) aims to increase awareness of incontinence, and introduce innovative new management products such as locally made reusable incontinence wear, washable mattress protectors, commode chairs and wash mitts, designed to suit the needs of people with disabilities. Data collection utilized pre and post training surveys with VHW's and interviews with a purposive sample of community members in target communities.

**Results:** The study revealed significant positive outcomes for people who experience incontinence within Vanuatu. VHW's reported a 79% rise in awareness of incontinence and a 93% increase in knowledge of assistive devices and products to support incontinence management. Community members reported an 84% increase in the utilization of assistive products for managing incontinence.

**Discussion:** This project highlights the importance of providing information and locally accessible products to enable safe incontinence management during and after disasters. Integrating incontinence information and safe management products in disaster planning and response enables a more inclusive and resilient society where no one is left behind.



## Maternal nutrition and birth outcomes in Efate Vanuatu: A preliminary cross-sectional analysis

Ms Eliza Kitchener<sup>1,2</sup>, Dr Rachael Thurecht<sup>1</sup>, Ms Nerida Hinge<sup>3</sup>, Dr Jenny Stephens<sup>3</sup>, Dr Matthew Cornish<sup>4</sup>, Ms Alannah Konners<sup>1</sup>, Ms Jemma Mackrill<sup>1</sup>, Dr Barnaby Dixon<sup>1,2</sup>, Ms Tominic Turi<sup>1</sup>, Mr Rex Turi<sup>1</sup>, Dr Georgia Kafer<sup>1,2</sup>

<sup>1</sup>School of Health, The University of the Sunshine Coast, Moreton Bay, Australia. <sup>2</sup>Australian Centre for Pacific Islands Research, Sippy Downs, Australia. <sup>3</sup>Ministry of Health, Port Vila, Vanuatu. <sup>4</sup>Dokta Blong Mi, Port Vila, Vanuatu

### Abstract text

**Background:** Dietary folate (folic acid) substantially reduces congenital anomalies, including neural tube defects (NTDs) and associated stillbirths, by up to 90%. Despite dark green leafy vegetables like Aelan cabbage being rich local sources of folate, crop growth is often impacted by severe weather events such as cyclones. Neighbouring Pacific nations (Fiji, Solomon Islands, and PNG) address potential folate deficiencies by fortifying staple grains (rice/wheat) to ensure sufficient folate intake for healthy fetal development. Currently, Vanuatu lacks mandatory folate fortification, and we do not know if ni-Vanuatu women consume enough folate-rich foods to support good fetal health. This study aims to assess stillbirth rates, NTDs, and folate-rich food consumption to determine the need for folic acid fortification in Vanuatu.

**Methods:** In September 2023, 470 women aged 18 and above were surveyed in peri-urban (Mele/Melemat) and rural (North/North East Efate) Efate. Surveys recorded participant demographics, pregnancy and birth history, self-reported stillbirth and NTD occurrences, and folate-rich food intake (evaluated using diet diversity scores).

**Results:** Preliminary analysis reveals an Efate-wide stillbirth rate of 47.8/1,000 live births. Notably, rural areas exhibit significantly higher stillbirth rates (63.7/1,000) compared to peri-urban areas (26.2/1,000). Across Efate, the NTD rate was found to be 27.6/10,000 births. Additionally, we found that in months post cyclone Judy/Kevin, women struggle to maintain daily intake of folate-rich foods.

**Discussion:** This represents the first report of NTD incidence in Vanuatu. The NTD rate in Vanuatu exceeds the global average, and rural Efate's stillbirth rates are six times higher than that currently reported by the World Bank (10.6/1,000). We propose that recent cyclonic events have impacted the availability of green leafy vegetables like Aelan cabbage, and advocate for considering staple grain fortification in Vanuatu to safeguard fetal and maternal health, given the susceptibility of ni-Vanuatu people to food security challenges.



## Disaster Response and Recovery: Rehabilitation has an key role elsewhere, can we do more in Vanuatu ?

Dr Tracey Symmons

Townsville University Hospital, Townsville, Australia

### Abstract text

**Introduction:** Vanuatu has a high frequency of natural disasters, that may worsen with climate change. These disasters can result in substantial number of survivors with disabling conditions, which places a substantial burden of care on families and communities, and economic burden on the country. In addition, people living with disability and vulnerable populations have a much greater mortality in disaster settings. In Vanuatu, there is unmet need for rehabilitation care for those living with pre-existing disabilities and as well as many other chronic conditions. During and after disaster, rehabilitation services are in greater demand due to the influx of injuries and an increase in communicable diseases, as well as challenges providing care for persons living with pre-existing disabilities and chronic conditions who are unable to access their usual supports.

**Methods:** A literature review was undertaken to review the role of Rehabilitation Medicine in disaster settings. Recent peer reviewed literature was selected with a search of key words: Rehabilitation, natural disasters, cyclones, earthquakes, spinal cord injury.

**Results:** 10 relevant papers were identified which were specifically relevant to rehabilitation in disaster settings. 4 related to the Australian context, the others related to disaster preparedness and response in international disaster settings.

**Discussion:** People injured or affected by disasters may need enhanced rehabilitation services to enable improved function, return to the community and an optimised quality of life. There are positive benefits for integrating rehabilitation services within health care systems including better clinical outcomes including having less complications and shortened length of stay. Evidence strongly supports the early involvement of rehabilitation health professionals (doctors, physiotherapists, nurses) in disaster response and recovery for minimising mortality and disability and improving clinical outcomes and quality of life for disaster survivors. The challenge for Vanuatu is how to take the steps to include a rehabilitation approach.



4TH ANNUAL CONFERENCE

# VANUATU HEALTH RESEARCH SYMPOSIUM

12-13 OCTOBER 2023

**ACCEPTED FOR POSTER PRESENTATION**



## Nutrient Profiling of Cereals in Vanuatu: A Comprehensive Analysis

Dr Ronick Shadrack<sup>1,2</sup>, Ms Krishna Kotra<sup>3</sup>, Mr Terence Roberts<sup>1</sup>

<sup>1</sup>Vanuatu Bureau of Standards, Port Vila, Vanuatu. <sup>2</sup>The Ronz consulting Agency, Port Vila, Vanuatu. <sup>3</sup>School of Agriculture, Geography, Environment, Ocean and Natural Sciences (SAGEONS), The University of the South Pacific, Emalus Campus, Port Vila, Vanuatu

### Abstract text

**Background:** Nutrient profiling of foods, specifically cereals, is essential for regulating nutritional labels, health claims, and marketing. With cereals becoming a significant part of global consumption, understanding their nutrient content is crucial for informed dietary choices. This study aimed to profile the nutrient content of cereals sold in a supermarket in Port Vila, Vanuatu, and compare them with international quality standards.

**Methods:** A two-week survey was conducted, capturing the nutrient information from cereal product labels. Images of these labels were taken using a tablet device and subsequently entered into a database. The data was analysed using a two-way randomised block design to evaluate the presence of each nutrient compound, the most common nutrients on labels, and the content of each compound in the cereals.

**Results:** Nutritional analysis of the cereal products was conducted for Energy, Protein, Fats, Carbohydrates, Sugar, Sodium, and Saturated Fatty Acids. Notably, the values for Sugar, Sodium, and Saturated Fats in some cereals exceeded the maximum limits set by the United States Food and Drug Administration (FDA). Only 1.6% of cereal products met all FDA requirements for Sugar, Sodium, and Saturated Fats, while 37% of the cereal products failed to meet FDA limits.

**Discussion:** Cereals are a major source of dietary energy in Vanuatu, making up 26% of all energy food consumed. However, the high content of certain nutrients, especially those exceeding FDA limits, poses potential health risks. Authorities may need to implement a food quality monitoring program to ensure supplies are within safe limits. The findings also underscore the importance of informed dietary choices and the potential implications of consuming cereals with high nutrient concentrations.





## Population Immunity Against mosquito-borne diseases and other infectious diseases in Vanuatu: the PIANO project

Mr Wesley Donald<sup>1</sup>, Miss Lucie Vigier<sup>2</sup>, Miss Aleesha Kalulu<sup>1</sup>, Mr Jean-Jacques Rory<sup>1</sup>, Mr George J Pakoa<sup>1</sup>, Dr Tessa Knox<sup>3</sup>, Mrs Wendy Williams<sup>1</sup>, Mrs Cécile Depuille<sup>4</sup>, Mr Karl Huet<sup>2</sup>, Dr Olivia O'Connor<sup>2</sup>, Dr Catherine Inizan<sup>2</sup>, Mrs Myriam Abel<sup>1</sup>, Dr Philippe Guyant<sup>3</sup>, Dr Myrielle Dupont-Rouzeyrol<sup>2</sup>

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### Abstract text

**Background:** The project aims to determine the seroprevalence of the Vanuatu population for infectious and mosquitoes-transmitted diseases that have affected the country in the past to estimate to which pathogens the Vanuatu population has been exposed to and thus assess the level of epidemic risk in case of introduction of these pathogens in the country.

**Methods:** 1,200 volunteers from age 6 and above representative of the Vanuatu population will be enrolled to collect a blood sample. Blood samples will be tested for the presence of antibodies against arboviruses as dengue, Ross River, chikungunya, Zika but also malaria, COVID-19, hepatitis B and leptospirosis by using the Luminex technic.

**Results:** After agreement from Vanuatu National Ethics Committee, inclusions took place between Octobre 2022 to May 2023 in the islands of Efate, Santo, Malekula, and Tanna. In total, 20 sites including 6 schools participated to the project. 1,122 participants were included in the study, corresponding to 93.5% of the target. The 19-34 years old age group is underrepresented. Serological analysis is under investigation.

**Discussion:** The results of the project will inform Health Authorities about the populations at risk of developing infectious or mosquito-borne diseases and will help adapt prevention and public health intervention strategies to protect the Ni-Vanuatu population.



## Health and Wellbeing impact of Participation in the VPride Fashion Show among VPride members, 2022

Mr Yannick Tarivuhavuha<sup>1</sup>, Ms Gillio Baxter<sup>1</sup>, Dr Caroline Van Gemert<sup>2</sup>, Mrs Jane William<sup>3</sup>, Mrs Renata Amos<sup>4</sup>, Ms Leila Bell<sup>5</sup>, Mrs Kaylene Kalmos<sup>4</sup>

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### Abstract text

**Background:** VPride was founded in 2007 and established to educate, advocate and mobilise people with diverse sexual orientation, gender identity, and gender expression (SOGIE) in Vanuatu. Since 2019, VPride has hosted a fashion show to showcase the design skills of VPride members and to increase visibility of people with diverse SOGIE in Vanuatu and promoting the space of inclusivity. The objective of this study was to explore the impact that participation in the fashion show has on VPride members health and wellbeing.

**Methods:** A focus group discussion (FGD) was conducted with VPride members that participated in the 2022 VPride Fashion Show within two weeks after the event. All VPride members that participated in the event as designers, models or crew were invited to participate. The FGD was facilitated by two experienced facilitators, including a VPride leader, and conducted in Bislama.

**Results:** Six people participated in the FGD and were designers (n=2) and models (n=4) in the 2022 show. The participants identified several overarching benefits including an improved sense of safety and wellbeing, increased confidence and empowerment, a feeling of belonging, and less stigma and discrimination. The need for mental health services for people with diverse SOGIE was highlighted by participants.

**Discussion:** This research highlighted several positive outcomes on mental health and wellbeing from participating in the VPride fashion show. Key recommendations from the session include the need for mental health services and support, such as through trained peer educators, group sessions or mental health professionals.



## Tafea, Sanma and Shefa Mass Campaign for Neglected Tropical Disease Mass Drug Administration & Survey, 2021-2023

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### Abstract text

**Background:** Soil transmitted helminths, scabies and yaws are neglected tropical diseases endemic the 3 provinces, Tafea, Shefa and Sanma. To control and eliminate these NTDs, the Vanuatu Ministry of Health, with the support of the non-profit organization Bridges to Development & WHO is implementing large-scale innovative integrated control programs including two rounds of mass drug administration with albendazole, azithromycin and ivermectin, concurrent with active surveillance of yaws and leprosy. The implementation of surveys integrated with MDA is a novel approach that allows more cost-efficient collection of data necessary to monitor and evaluate impact of the MDA and to reduce and controls the NTDs.

**Methods:** A mass drug administration and survey will be conducted in the 3 provinces. A team comprising of 4 members in an MDA team and 8 teams in a survey team who do NTD screening and treat all the communities and Cross-sectional parasitological surveys will be conducted before and after MDA to assess its impact. At the time of writing, baseline prevalence surveys were carried out in 132 villages across three provinces: Tafea, Sanma, and Shefa between 2021-2023. The aim was to perform skin examinations on 100 residents and collect 50 stool samples per village.

**Results:** Sanma has the highest coverages followed by Shefa and then Tafea provinces. A total of 8,552 individuals participated in the survey. Sanma collected the highest stool samples, followed by Shefa and Tafea province. Skin examinations found scabies prevalence of 14.0% in Tafea, 2.6% in Sanma, and 4.1% in Shefa.

**Discussion:** Our study suggests that there is a high prevalence of STH and skin diseases among the three provinces. Tafea has the low coverage was because it is the first to pilot the 3 drugs and survey and during the time a lot of communities confuse the medication with covid -19 vaccine.



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