



Ministry of Health
Vanuatu Government



3rd VANUATU HEALTH RESEARCH SYMPOSIUM

Evidence to Impact

26-28 OCTOBER 2022 LUGANVILLE & PORT VILA

FINAL REPORT

Including Program &
Presentation Abstracts

3rd VANUATU HEALTH RESEARCH SYMPOSIUM

Symposium Report



Event overview

On 26-28 September 2022, the 3rd Vanuatu Health Research Symposium was held using an in-person and online mode at conference venues in both Luganville and Port Vila. While it was initially planned to be held in Luganville, logistical challenges due to flight availability and weather necessitated a late change in the mode of Symposium convening.

A total of 80 persons attended in person in Port Vila and 35 attended in person in Luganville. At least 40 others attended remotely online through Zoom throughout the Symposium duration. Therefore, the total number of attendees was at least 155 persons.

Program

The meeting was opened by Dr Any Ilo, Dr Ryan Kalsakau, Assistant Secretary General from Sanma Provincial Government Carol Rovo and Director Sereana Natuman. A plenary speech was issued by Dr Moses Nama from the Papua New Guinea Institute of Medical Research (PNG-IMR) on the role of indigenous researchers in enabling impactful research.

The scientific program followed over two days, and was split into thematic sessions that included:

- Disease management
- Health communication
- Infectious diseases
- Policy
- Water, sanitation and hygiene
- Maternal and child health
- Other topics of interest

The final session included a presentation on work on vector-borne diseases at PNG-IMR as well as excerpts from a recent scientific conference on women's health. The final presentation was on the next steps in developing a prioritized health research agenda for Vanuatu.

The program is presented in the appendix of this report.

Content

The Symposium included a total of 45 presentation including 34 oral presentations and 11 posters. Abstracts for all presentations accepted for the Symposium are included as an appendix to this report. All content including abstracts and [presentation files](http://www.moh.gov.vu/healthsymposium) are also available at: www.moh.gov.vu/healthsymposium

Key recommendations

Overarching key recommendations from the Symposium included:

- To ensure that research work in Vanuatu, including that presented at the Symposium, proceeds to publication to ensure optimal update
- There should be assigned time off (ie. by the PSC) for all available staff to attend the 2023 Vanuatu Health Research Symposiums and future symposia
- A committee should be established to assist with the next steps defined for development of a prioritized health research agenda for Vanuatu

Actionable recommendations were compiled from presentations and are provided as Annex 1 by Directorate and topic.

Award winners

A selected group of 15 persons who did not present at the Symposium were assigned as scorers. After viewing the presentation, scores were entered into a Google form with recommendations made for awards in 10 categories.

Awards were presented at an Award Ceremony held on 28 October 2022, as follows:

- Best presentation with a provincial focus - Markson Tabi & Kathy Vuhu
- Best presentation with a national focus - Sael Fred
- Best nurse-led research presentation - Graham Tasso
- Best clinical presentation - Dr. Tannia Binihi
- Best public health research presentation - Ratu Bani
- Best overall oral presentation - Allison Coleman and Florita Toa Sitobata
- Best overall poster presentation - Dr. Rhoda Bule
- Best presentation by an early-career researcher - Dr. Terina Bangalini
- Best presentation by a senior researcher - Dr. Boniface Damutalau
- Symposium Committee Judges Choice - Jenny Narasia

Three presenters were also selected to receive a travel bursary to attend the Pacific Island Health Research Symposium in mid-2023. The 3 presenters selected were:

- Florita Toa Sitobata
- Dr. Terina Bangalini
- Dr. Boniface Damutalau

Organising Committees

The National Symposium Organising Committee was chaired by Dr Lawrence Boe (on behalf of the Vanuatu Medical and Dental Association) and Dr Ryan Kalsakau, and included Dr Vincent Atua, Dorinda Bule, Dr Matthew Cornish, Aleesha Kalulu, Dr Tessa Knox, Yohann Lemonnier and Dr Caroline van Gemert.

The Local Organising Committee in Santo was chaired by Dr Ryan Kalsakau and Dr Andy Ilo and included Mechelline Ala, Mark Kalpukai, Ricky Lee, Glenys Tabi and Adeline Tobibi.

A Symposium Scientific Committee was tasked with review of abstracts and selection of content for presentation, as well as formulating the Symposium program. This Committee was chaired by Dr Crystal Garae and Dr Vincent Atua, and included Dr Lawrence Bo, Dr Chris Brown, Dr Matt Cornish, Charity David, Dr Philippe Guyant, Florita Toa, Pamina Manbit, Dr Minado Paul, Kalkie Sero, Dr Caroline van Gemert and Dr Chatu Yapa.

The Treasury Committee was chaired by Menie Nakohama and Sandy Moses and included Cecile Depuille and Greg Willie. Information technology support and link up in Port Vila was provided by Chris Gauthier-Coles and in Luganville was provided by BJBN Lifestreams Broadcast Company.

Supporters

Financial and technical support for the Symposium was provided by:

- Vanuatu Ministry of Health
- Vanuatu Medical Doctors Association
- World Health Organization
- Australian Aid
- Vanuatu Health Program
- Pasifika Medical Association Group
- Bank of the South Pacific
- ANZ Bank
- Air Vanuatu
- Vanuatu Children's Health Network
- Leomala Medical
- Tasinga Telehealth Vanuatu
- Therapeutic Guidelines Australia

Symposium Reflections

Committee members met following the Symposium to deliberate on how the Symposium progressed and how to improve for next time. Outcomes are presented in the following table.

	What worked well?	What didn't work well?	What can we improve?
Executive engagement	<ul style="list-style-type: none"> Improved executive engagement compared to previous years Commitment from Dir. Curative from 2021 carried through to this year Opportunity to present in Fiji 	<ul style="list-style-type: none"> Conflicting engagements due to travel – Exec need advanced warning MOH staff want to be invited to attend (not just presenters) 	<ul style="list-style-type: none"> Work with a broader MOH executive to increase buy in for MOH Possibility to declare half day to allow more staff to attend Foster strengthened team spirit in MOH with regards to symposium Exec should attend in person to hear presentations and recommendations Advanced planning – invitations and coordination
Symposium organizing process	<ul style="list-style-type: none"> More members and subgroups this year More MOH leadership in coordination MOH focal points for logistics and finance support worked well Strong coordination support from Santo – Dr Ryan 'emerging leader' 	<ul style="list-style-type: none"> Scholarship logistics – need a subgroup? Need a fundraising subgroup? Meeting attendance varied over time – requires consistent and on time attendance Members should be given request letter in advance with Executive approval 	<ul style="list-style-type: none"> Include younger emerging MOH staff and MOH focal points Nominate a more junior Org Comm chair with Dr Vincent to provide mentoring support and advice Identify a PH intern for taking on a secretariat role Subcontract events management and logistics support, including IT Secure appointment letters earlier Clearly detail TOR and expectations of membership Potentially include more overseas researchers with interest in Vanuatu health research
Abstract submission and review	<ul style="list-style-type: none"> Oxford Abstracts – easy to use and good for sharing reviewing and decisions between different people 	<ul style="list-style-type: none"> Online program didn't show inline comments – feedback was confusing to participants Feedback to participants was hard to see Some reviewers didn't provide much feedback 	<ul style="list-style-type: none"> Purchase premium program (around \$2000) which includes program planner Additional training for reviewers Requires MOH staff to be trained to use program so they can lead

		<ul style="list-style-type: none"> Assessment was a bit confusing – needs revision 	
Pre-symposium abstract and presentation workshops	<ul style="list-style-type: none"> In-person training in Port Vila and Santo 	<ul style="list-style-type: none"> Provincial staff didn't engage – not sure how we can engage more Not organized early enough so little time for communication Venue often didn't include internet Needed stronger coordination Training was a closed opportunity and not inclusive to all potential presenters 	<ul style="list-style-type: none"> Do "Save the Date" earlier and advise of abstract help much earlier in the year More involvement from Scientific Committee to review and support abstracts POHLN hubs at VCH as an option for provincial engagement and workshops (POHLN hubs sit with Manila Office)
Registrations	<ul style="list-style-type: none"> Online form 	<ul style="list-style-type: none"> Online forms challenging for some Confusion in Santo about registration costs and who could attend for free Needed to be sent earlier and made easier to fill in Registrations coordinator needed to be identified earlier for Symposium registration 	<ul style="list-style-type: none"> Name tags (suggestion from online review forms) Symposium registration person needed to be identified
Symposium convening and program	<ul style="list-style-type: none"> Great opportunities for engagement between different health sectors 	<ul style="list-style-type: none"> Big time pressure due to number of oral presentations Livestreaming did not work well due to limited internet (cut out) 	<ul style="list-style-type: none"> Addition of interactive workshop sessions to facilitate further networking and develop ideas Parallel sessions to include discussions somewhere close to conference venue Announce topics in advance to increase international engagement

		<ul style="list-style-type: none"> Recordings were uploaded later but uptake was not as high 	<ul style="list-style-type: none"> Common interest plenary sessions with smaller groups for specific interests – increased choice for engagement ? Facilitate discussion sessions in provinces Highly commended awards to encourage early career researchers Inclusion of skills sessions
Posters	<ul style="list-style-type: none"> Posters were ready in advance Poster template looked good 	<ul style="list-style-type: none"> Some posters were submitted late Some posters were missing basic information like author names 	<ul style="list-style-type: none"> Posters will need review by Scientific Committee prior to printing
Video link up		<ul style="list-style-type: none"> Hard to hear Santo presentations online due to set up 	<ul style="list-style-type: none"> Partnerships with Vanuatu Skills Partnership Engagement with POHLN for rural and remote training program = research hub Contract IT company to ensure everything is looked after and take load off committee members
Online participation	<ul style="list-style-type: none"> Some good discussion online People joining from overseas Online participants were actively asked for feedback Links were widely circulated 		<ul style="list-style-type: none"> Continue online discussion Allocate online moderator? Future planning for hybrid options to increase engagement with provinces Social media engagement plan incl. sharing to provincial pages
Provincial representation	<ul style="list-style-type: none"> A few great talks from provincial staff 	<ul style="list-style-type: none"> Provincial staff not in attendance Need to build engagement and buy-in with provincial health services 	<ul style="list-style-type: none"> Partner with Vanuatu Skills Partnership in 2023 for them to set up “watch parties” in each of the provinces with catering – they have videoconferencing facilities set up in each province. PHMs could identify which staff should attend ? Dedicated awards e.g. best provincial health team for provincial engagement and participant engagements (based on attendance and no. of presentations etc).

Inclusivity and Gender Equality	<ul style="list-style-type: none"> • Several presentations focusing on disability and inclusion • Yannick from VPride attended with view to present next year 	<ul style="list-style-type: none"> • No presentations focusing on gender inclusion 	<ul style="list-style-type: none"> • Encourage participation from a broader range of vulnerable or marginalized groups • Include Wan Smol Bag and Vanuatu Family Health Association in mailing list and send request to participate • Invite members from groups such as VSPD as ushers, registration clerks, etc
Communications	<ul style="list-style-type: none"> • Really clear and well-timed comms – particularly the videos and Daily Post articles • Website an excellent resource for retaining Symposium content • Symposium abstracts booklet very well received • Posters and banners were clear 	<ul style="list-style-type: none"> • Late finances meant a rush with printing • Not enough Symposium booklets printed due to budget • Comms Team developed a clear plan but additional tasks were assigned (including at the last minute) that made unnecessary work and stress • Information to communicate was confused and not clear, especially regarding the pre-Symposium trainings • Presentation line-up changed a lot so printed program was inaccurate 	<ul style="list-style-type: none"> • Monthly meetings commencing in November 2022 to start planning for 2023 meeting • Clear information needs to be provided in advance so Comms team can do their work effectively • Higher budget needed to ensure printing of all key Comms items – especially symposium booklets • Print program separate to abstracts booklet • Do not put venue or date on large comms items as these may change • Sponsor acknowledgment was carefully balanced by Comms Team - partners should request in advance to display or release separate promotional items
Budget and funding	<ul style="list-style-type: none"> • Requests for funding were submitted earlier than 2021 • VMDA bank account was made available – this was great for smaller purchases • Dir. Sereana followed up formally and informally with donors – opportunities for 	<ul style="list-style-type: none"> • Clarity on funding and gaps was missing • Sponsorship needs to have its own focal point with focused follow up – challenges due to time constraints 	<ul style="list-style-type: none"> • Continue finance group but also have fundraising group with constant budget updates • Identify opportunities for 'in kind donations' • Develop a 1 pager for funding with key items of expenditure seeking letter for next year to increase transparency for funders • Include Symposium in annual business plans

	increased engagement and financial support next year		
Evaluation	<ul style="list-style-type: none"> Evaluation was conducted (wasn't conducted in 2021) 	<ul style="list-style-type: none"> Evaluation form needs to be shared constantly to participants to encourage feedback 	<ul style="list-style-type: none"> Also have paper forms on hand at symposium
Venues	<ul style="list-style-type: none"> VPTC was an adequate last-minute option – good open space and lighting and allowed for mingling 		<ul style="list-style-type: none"> Suggestion to identify a prestigious venue such as the Chiefs Nakamal rather than conference centre – more accessible and cheaper and may increase the prestige of presenting for participants in other provinces
Catering		<ul style="list-style-type: none"> Not enough vegetarian options 	<ul style="list-style-type: none"> Increase variety of food, including vegetarian options. Consider inviting local mamas and making it an NCD-friendly event.
Social events		<ul style="list-style-type: none"> Need to have invited speakers attend the social event on time – increase networking opportunities 	<ul style="list-style-type: none">
Other comments			<ul style="list-style-type: none"> Potential to develop a framework for a Vanuatu IMR and outsourcing M&E for programs Development of scoping paper for research skills building incl. opportunities to publish Opportunities to publish in PNG Medical Journal (possible to collate 8-12 papers for Vanuatu edition of PNG medical journal)

3rd VANUATU HEALTH RESEARCH SYMPOSIUM

Symposium Program



Thursday 27 October

8:00 AM	8:30 AM	Opening Ceremony	
		Welcome: VHRS Organizing Committee	Dr. Vincent Atua
		Welcome: SANMA Health	Dr. Carol Rovo, Assistant Secretary General, SANMA Provincial Government
		Welcome: Ministry of Health	Dr. Sereana Natuman, Director of Curative and Hospital Services and Acting Director General, Ministry of Health
8:30 AM	9:30 AM	Session 1: Plenary speaker	
		Introduction of Plenary Speaker	Dr. Vincent Atua
		Plenary Speech: Dr. Moses Naman	The role of indigenous researchers in enabling impactful research
		Questions & Discussion	
9:30 AM	10:00 AM	Posters & Tea	
10:00 AM	12:00 PM	Session 2: Disease management [Moderator: Dr. Matt Cornish]	
		Dr. Jenneth Jeantino	Evaluation of antibiotic prescribing patterns among inpatients at the Northern Provincial Hospital medical ward - a retrospective study.
		Agnes Mathias	Analysis of outpatient antibiotic consumption at Vila Central Hospital over four years.
		Kathy Vuhu	The need for control of antibiotics for the prevention and management of antimicrobial resistance (AMR)
		Questions for speakers' panel	
		Dr. Tannia Binihi	The impact of the 2022 influenza outbreak on asthma admissions at the Vila Central Hospital.
		Andre Tarip	Change in acuity observed following implementation of the Interagency Integrated Triage Tool at Vila Central Hospital Emergency Department, Shefa Province, 2021-2022
		Jessica Seymour	Community utilisation of the Diabetes Support Program at Wan Smolbag Theatre, Shefa Province 2019-2021
		Nathan Zacharie	Comparing self-reported rates of Non-Communicable Diseases (NCD) among people self-identifying as living with a disability to the broader population during the Vanuatu COVID-19 vaccination rollout (2021 – 2022)
		Questions for speakers' panel	
12:00 PM	1:00 PM	Lunch	
1:00 PM	2:30 PM	Session 3: Health communication [Moderator: Dr. Tessa Knox]	
		Dorinda Bule	Rumour monitoring and social listening using an AI tool, Talkwalker
		Melissa Kalmatak	Engaging youth voice in decision-making through U-Report

		Dr. Caroline van Gemert	Evaluation of Short Message Service to screen for COVID-19 symptoms among international travellers entering Vanuatu requiring quarantine, 2020
		Lola Iavro	Measuring the efficacy of phone monitoring of travellers in quarantine in 2021 in Shefa Province
		Melissa Binihi	Rapid formative assessment on additional, COVID-19 and routine vaccines
		Questions for speakers' panel	
2:30 PM	3:00 PM	Posters & Tea	
3:00 PM	4:30 PM	Session 4: Infectious diseases [Moderator: Dr. Basil Leodoro]	
		Florita Toa Sitobata	A community prevalence study to measure the level of under-detection of COVID-19 on Efate Island, Vanuatu.
		Gilson Fangaria	Surveillance of COVID-19 outbreak at Vila Central Hospital, Vanuatu, March-August 2022
		Markson Tabi	Investigation of an outbreak of arthritis and conjunctivitis of unknown origin in Central Pentecost.
		Leila Bell	Improving understanding of the hepatitis B cascade of care in Vanuatu
		Renata Moshie Esther Amos	Descriptive analysis of national tuberculosis data, Vanuatu, 2016 to 2020
		Questions for speakers' panel	
4:30 PM	5:30 PM	Vanuatu Medical Doctors Association Annual General Meeting & Elections	
6:00 PM	8:00 PM	VMDA Dinner @ Erakor Resort † [Host: Dr. Sale Vurobaravu]	

Friday 28 October

8:00 AM	9:45 AM	Session 5: Policy [Moderator: Charity David]	
		Dr. Sarah James	Creating a more robust, inclusive, and sustainable food system for Vanuatu by 2030
		Saen Fanai	Road traffic injury could be minimized when individual road users take more responsibility for their safety and the safety of others": Perception of Healthcare Workers in Vanuatu
		Marie Laure Nirua	Comparing "Fixed-Site" and "Mobile-Site" COVID-19 vaccine delivery strategies in reaching vulnerable peoples in Vanuatu
		Sael Fred	Strengthening community level primary health care in Vanuatu: a trial of output-based incentives for Village Health Workers
		Obed Manwo	Assessing Public Awareness around the De-Centralized Model of Care in Shefa Province in 2022
		Questions for speakers' panel	
9:45 AM	10:15 AM	Posters & Tea	

10:15 AM	12:00 PM	Session 6: Water, sanitation, and hygiene [Moderator: Dr. Crystal Garae]	
		Allison Coleman	Making Inclusion Meaningful - A new way to improve sanitation and hygiene for people with disabilities in Vanuatu
		Brecht Mommen	WASH in schools in Vanuatu; moving from pilot to national scale
		Simeon Bage	The Farm to Hospital Initiative – Driving change through collective action; Sanma Province, 2022
		Ratu Bani	Analysis of water, sanitation, and hygiene services in healthcare facilities
		Graham Tasso	Vila Central Hospital baseline data on hand hygiene from June to July 2022
		Questions for speakers' panel	
12:00 PM	1:00 PM	Lunch	
1:00 PM	2:30 PM	Session 7: Maternal and child health [Moderator: Dr. Chatu Yapa]	
		Dr. Boniface Damutalau	The state of cervical cancer screening in Vanuatu: A retrospective analysis 2015-2020
		Jenny Narasia	Understanding health workers' views on addressing the unmet need for family planning in Guadalcanal, Solomon Islands
		Miika Coppard	Women's knowledge and beliefs about contraceptive use in West Ambae, Vanuatu
		Dr. Georgia Kafer	Understanding the impact of micronutrient deficiencies on birth outcomes in Vanuatu and in the wider Western Pacific
		Juliana Warput	The association between early initiation of antenatal care and birth outcomes in teenage mothers at Northern Provincial Hospital in Santo, 2021-2022
		Dr. Terina Bangalini	Step up uterotonic medications in women with high risk of Post-Partum Haemorrhage at Godden Memorial Hospital, January 2020 to December 2021.
		Questions for speakers' panel	
2:30 PM	3:00 PM	Posters & Tea	
3:00 PM	4:30 PM	Session 8: Topics of interest [Moderator: Dr. Julie Bador]	
		PNG Institute for Medical Research team	STRIVE PNG: Stronger Surveillance and Systems Support for Rapid Identification and Containment of Resurgent or Resistant Vector-Borne Pathogens in Papua New Guinea
		Susan Tavimele Wokeke	Excerpts from Pacific Society for Reproductive Health: 14th Biennial Scientific Conference, Samoa 2022: Re-imagining and Actions for Women's Health: Sail with Faith, Lead with Wisdom
		Dr. Chris Brown	The State of Psychology and Mental Health Services in Vanuatu
		Dr. Tessa Knox	Towards a prioritised health research agenda for Vanuatu. The next steps.
6:00 PM	9:00 PM	Awards Night Dinner @ Ramada † [Host: Dr. Vincent Atua] and The Black Pearl ‡ [Host: Dr. Ryan Kalsakau]	

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Presentation Abstracts



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**ACCEPTED FOR
ORAL
PRESENTATION**



3rd Vanuatu Health Research Symposium
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Luganville, Santo, Vanuatu

The Farm to Hospital Initiative – Driving change through collective action; Sanma Province, 2022

Simeon Bage, Steven Tavnabit, Jonas Masovish

Vanuatu Skills Partnership, Luganville, Vanuatu

Abstract

Background: Non-Communicable Diseases (NCDs) in Vanuatu severely impact health outcomes and livelihoods. Approximately three-quarters of deaths in Vanuatu are caused by NCDs. A major contributing factor is lifestyle and unhealthy eating practices. Through the Sanma Skills Centre, the Skills for Health workstream implemented a Farm to Hospital (F2H) initiative in partnership with the Northern Provincial Hospital (NPH) in Sanma in July 2022. The objective of the F2H initiative was to support the NPH to create a sustainable farm to supply organic food and protein to the hospital kitchen which is then used to feed patients while reducing kitchen expenditure.

Methods: A collective action partnership was built between the Sanma Provincial Government, NPH, the Department of Agriculture and Rural Development (DARD) and the Sanma Skills Centre. A poultry farm, fishponds and vegetable plantation were established at NPH. Training was provided to hospital personnel in farm and production upkeep and to hospital kitchen staff in the use of the new food sources in the preparation and presentation of healthy meals for patients. A communications and advocacy campaign is currently underway. Evaluation criteria for the first three months of implementation included - quantity of new high protein/nutrient food sources provided to the hospital, savings in food expenditure accrued to NPH, and NPH patient and hospital staff feedback.

Results: In the first three months of implementation, two tilapia fishponds were populated with 2,250 tilapia fish, 210 chickens are producing 60 eggs/day, 8 new types of vegetables have been grown and harvested, 180,000 VUV saved on vegetables alone by NPH and there has been high levels of patient and hospital staff satisfaction

Discussion: This initiative shows how cross-sector collaboration with a shared vision and resource pooling is supporting health outcomes, while also informing similar projects across other locations, including a Farm to School model.



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Step up uterotonic medications in women with risks of Postpartum Hemorrhage at Godden Memorial Hospital, January 2020 to December 2021

Terina Bangalini, Laurence Boe

Lolowai Hospital, Ambae, Vanuatu

Abstract

Background: Postpartum Haemorrhage remains a global burden contributing to high maternal and morbidity rates. In resource-limited settings like Godden Memorial Hospital (GMH), the main referral hospital of Penama Province careful risk assessment of mothers can be performed to prevent Postpartum Haemorrhage (PPH). The aim of the study was to investigate Health Care Worker (HCW) PPH risk classification and the tendency to use uterotonic drugs.

Methods: A knowledge-based survey was conducted for Health Care Worker (HCW) at GMH to gauge the knowledge of risks and indications of uterotonic drugs. We also conducted a retrospective study of vaginal deliveries registered in the Birth registry in the year 2020 to 2021 to see how the health workers were managing PPH. Statistical correlation between risk and PPH was computed using Chi Square and Fisher's exact test.

Results: We interviewed 4 nurses and 5 midwives (n = 9). The common antenatal risk factors identified by nurses were grand multiparous, previous PPH, multiple pregnancy, previous macrosomia. Common intrapartum risk factors identified were tears and macrosomia. The recovery rate of folders was 73% (195/269), and overall incidence of primary PPH was 10.3 %. However, 31.8% received extra doses of uterotonic medications out of which most were for PPH prophylaxis (62%). Computed Fisher's test showed statistical significance for a history of previous PPH (60%, $p = 0.002$) only.

Discussion: There is no standardized risk assessment among HCWs, but there is a high tendency (62%) to step up in uterotonic medication doses. PPH prophylaxis may be targeted for women with a history of PPH. The difficulty in standardizing a step-up regime is likely due to independent association of risk factors.



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The analysis of water, sanitation, and hygiene services in healthcare facilities in Vanuatu, 2020

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Abstract

Background: In Vanuatu, a significant proportion of healthcare facilities (HCFs) struggles to provide quality healthcare services due to limited access to basic WASH services. In 2020, the Ministry of Health conducted the first national Health Facility Readiness and Service Availability (HFRSA) Assessment over a total of 159 health facilities. The survey showed that no facility provided a 100 percent complete and secure WASH service to the local population at the time of the assessment.

Methods: Facility assessments were undertaken by Ministry of health (MoH) across clinics, dispensaries, health centers and hospitals. Environmental Health unit formulated and incorporated WASH questionnaires into the survey to capture WASH.

Results: The analysis shows that 71.1% of HCF had access to basic water services according to WHO/UNICEF Joint Monitoring Program (JMP) with improved water sources on the premises and water was available on the day of the survey while only 8.2% of HCFs had access to basic sanitation services that met JMP measures. Twenty-seven percent (27%) of HCFs had access to basic hygiene services with functional hand hygiene facilities available at one or more points of care and within 5 meters of toilets in accordance with JMP definition while only 13.2% of HCFs had basic health care waste management services. Only 5% of HCFs had basic cleaning services with basic protocols for cleaning available, and staff trained on cleaning protocols.

Discussion: Adequate WASH services in HCFs are critical elements for the delivery of quality and safe health care services. It can reduce the risk of health-acquired infections, tackle anti-microbial resistance, and improve patients' health outcomes. Therefore, there is an urgent need to improve WASH services in HCFs and this requires aggressive and collaborative efforts amongst different stakeholders to address these issues for better health outcome for the people of Vanuatu.



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Rapid formative assessment on additional, COVID-19 and routine vaccines in Vanuatu, 2021

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Abstract

Background: UNICEF Pacific, the Australian Regional Immunization Alliance (ARIA) in partnership with the Ministry of Health conducted a rapid formative assessment, to study vaccine awareness, attitudes, and intentions among 564 Ni-Vanuatu caregivers of children in February and March 2021.

Methods: The caregiver survey, was conducted in the different provinces of Vanuatu assisted by a local NGO, Youth Challenge, supporting data collection, with focus on routine immunization, additional vaccines and potential Covid 19 vaccine introduction.

Results: A total of 564 caregivers aged 18 years and above participated in the study, of whom 82% (461/564) were female and 18% (103/564) male. The results indicated 88% caregivers of 0-5 years old were aware about the seriousness of Covid 19, 67% intended to administer the vaccine, 22% were unsure and 11% were not interested in the Covid 19 vaccine. The responses on the additional vaccines indicated, 94% caregivers of 0-5years old were willing to give their child Pneumococcal vaccine and 92%, Rotavirus vaccine. Whereas, for the caregivers of 8-12 years old, 80% were willing to administer the Human Papillomavirus vaccine for their child, 11% were unsure and 9% not interested. On the routine immunization, 86% of the caregivers confirmed their children having administered all the recommended vaccines for their age. However, 3% were unsure and 11% confirmed having administered no vaccine.

Discussion: The RFA provided an insight into on the community's perception indicating a positive trend on vaccines among the community, also about the misgivings, indicating a need for an alternative approach. The insights helped tailoring the strategy and the messages accordingly and suggesting a different approach for sections with low vaccine confidence.



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The impact of the 2022 influenza outbreak on asthma admissions at the Vila Central Hospital

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Abstract

Background: The influenza virus is a highly transmissible virus responsible for global pandemics. It is a well-recognized trigger of severe bronchial asthma exacerbations resulting in increased morbidity and mortality. Until 2022, Vanuatu has not had a recent flu outbreak of overwhelming proportions and Vila Central Hospital has been able to cope relatively well with the stable number of asthma admissions. The recent influenza A outbreak was confirmed in June 2022. During this period, there was an anecdotal dramatic rise in asthma admissions with subsequent strain on clinical services. The objective was to determine the impact of the 2022 influenza outbreak on the number and severity of asthma admissions at the VCH medical ward and to assess associated burden on clinical services.

Methods: We conducted a hospital based retrospective observational study using data from admission registers and patient records. Supporting data was obtained from the MOH surveillance Unit.

Results: The number of reported ILI cases rose by >200% in June 2022 compared to May. Overall monthly admissions rose by 40% to 70% from June to August compared to the same period in 2021. Asthma admissions rose by up to 400% from June to August of 2022 compared to the same period in 2021. 84% of patients received more than 3 asthma drugs. 1 patient was mechanically ventilated. 47% received oxygen. Atrovent was unavailable for 4 cases who needed it. Urgent orders had to be made for medications and equipment. There was zero in hospital deaths.

Discussion: The unprecedented rise in the number of asthma admissions in mid-2022 coincided with the influenza outbreak. It stretched our hospital capacity and exposed huge gaps in our clinical services. In depth knowledge of local flu epidemiology and its clinical implications are key to ensuring appropriate and timely public health awareness, and optimal hospital preparedness planning.



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Rumour monitoring and social listening using an AI tool, Talkwalker

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Abstract

Background: UNICEF and MoH utilized Talkwalker, an artificial intelligence tool, to help address infodemic during the COVID-19 pandemic. The COVID-19 pandemic stimulated spread of misinformation at a time when facts are crucial and lifesaving. Some rumors are harmless, others create a significant public health risk and community conflict by stigmatizing protective practices. Social listening allows us to: engage with people, manage crisis, track anti-vaxxers, identify influencers and advocates.

Methods: Step 1: Monitor social media channels for keywords related to COVID-19 vaccines. Step 2: Analyze the information to strategize communication response. Social listening looks beyond the numbers to consider the mode behind the data helping us to understand how people feel about the topic.

Results: As the system automatically updates, it is important to focus in on key time points during vaccine rollout timeframe. On June 9, 2021, after national COVID-19 vaccination launch, there were a total of 118 reactions on government web pages managed out of Vanuatu including MoH; summarized sentiments are: 68% of the share of sentiments were neutral, 25% positive while 5% were negative. These data are monitored by the MoH team and are fed back for actioning including: strategically adjusting key messages, informing MoH Executive, draft concern and question response through FAQs, and talking points for the regular MoH media updates.

Discussion: The penetration of internet and particularly use of social media, using tools like Talkwalker are cost effective and time-efficient to support social listening and rumour monitoring. Talkwalker offers robust social listening features that analyzes blogs, forums, videos, news sites, review sites, and social networks all in one dashboard drawing from over 150 million data sources. By itself, it has limitations, however as part of a robust rumor management system it supports to enable an evidence-based and effective response by better understanding the misinformation and rumors circulating.



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Making Inclusion Meaningful - A new way to improve sanitation and hygiene for people with disabilities in Vanuatu

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Abstract

Background: In 2019 World Vision Vanuatu and key partners conducted a study of more than 56,000 individuals across Sanma and Torba provinces which found that 45% of all households surveyed reported using unhygienic sanitation facilities, with 32% of people with disabilities being unable to use the toilet without their bodies coming into direct contact with urine and faeces. Recognising that people with disabilities are not one homogenous group and toileting solutions cannot therefore be a “one size fits all” approach, an innovative Ventilation-Improved Pit (VIP) Latrine was designed and trialled with 103 people with disability across Sanma province. Additions of ultra-stable, locally built seat-risers, handrails, and ramps focus on improving accessibility, safety, dignity, and hygiene for people with disabilities.

Methods: Following the building of the new Inclusive VIP Latrines, a key-informant interview survey was carried out with a sample of 30% recipients to determine improvements in ease of accessibility, hygiene, safety, and independence for users and their families.

Results: The new innovative latrine design has significantly improved the lives of users with a 65% increase in ease of accessibility, 74% increase in independence and safety through use of seat risers and handrails, and 80% reduction in bodily contact with urine and faeces when using the toilet.

Discussion: A bespoke human-centred approach was utilised that focussed on meaningful dialogue with the person with disability to assess individual barriers to effectively tailor sanitation solutions to promote dignity, safety, and independence. Locally-led and locally-built solutions have resulted in sustainable, significant, positive, and meaningful impacts in the lives of people with disability in Vanuatu including improved well-being and a likely reduction in hygiene related diseases for the rising number of people living with disabilities in Vanuatu.



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Women's knowledge and beliefs about contraceptive use in West Ambae, Vanuatu

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Abstract

Background: In Vanuatu, unmet need for contraception is among the highest in the world, contributing to high rates of unintended pregnancy, adolescent pregnancy, maternal deaths, sexually transmitted infections, and other negative health, economic and social outcomes. This research was conducted to understand factors that influence family planning (FP) and contraceptive uptake by exploring women's knowledge and beliefs.

Methods: A qualitative study utilising semi-structured, face-to-face interviews (n=17) was conducted in West Ambae. The sample comprised 15 mothers aged 19-39 years and two health workers. Participants were sampled purposively to obtain rich and relevant information. Data were transcribed, coded and analysed thematically using an inductive approach.

Results: Women in West Ambae reported that they do not receive adequate information about sexual and reproductive health (SRH), particularly on preventing unwanted pregnancy, until after they have been pregnant at least once. The factors that influence the use of contraception and FP include: difficulties with obtaining reliable information about SRH; lack of awareness about the usefulness or importance of contraception; reluctance to seek information about SRH because of shyness and socio-cultural taboos; a lack of autonomy from male partners to make decisions about contraception and FP; concerns about health risks and side effects associated with contraception; and the availability and tradition of kastom medicine alternatives.

Discussion: Women in West Ambae are ill-equipped to prevent unintended pregnancy due to poor access to adequate SRH information and limited autonomy to make decisions about contraceptive use.



The state of cervical cancer screening in Vanuatu: A retrospective analysis 2015-2020

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Abstract

Background: Vanuatu is a lower middle-income country in the Pacific with an incidence of cervical cancer of 100 per 100,000 women. An opportunistic based cervical screening program has existed since 2008, with continuous data collection related to this since 2015.

Methods: We analysed all cervical screening data for Vanuatu over a six-year time period, undertaking a descriptive analysis for the data points of number of women screened with cytological and / or HPV screening, the results of both types of screening tests, the rates of treatment of HPV positive or cytological abnormalities found on screening, and incidence of the cervical cancer. Feedback on the challenges or barriers faced during the screening program are described.

Results: Data were available from 01/01/2015 through until 31/12/2020. A total of 70081 women were eligible for screening, and 15696 (22.4%) women underwent screening at least once. 13.2% of less than 30 years olds, 33.2% of 30-50 years old, and 15.8% of greater than 50 year olds were screened. 8910 HPV tests were undertaken, with 876 (9.8%) positive. 316 HPV positive cases had a histological assessment with LLETZ; 156 (49.4%) were high grade and 2 (0.6%) were cancer. 13,396 Pap smear tests were done; 315 (2.4%) returned a high-grade result and 226 (1.7%) possible high grade. Overall, 119 cancers were diagnosed from 15696 women screened (0.8%), including 6/3297 (0.2%) less than 30 year olds, 75/10089 (0.7%) 30-50 year olds, 38/2310 (1.6%) of over 50 year olds. Screening coverage varied across the 6 provinces from 8.9% to 31.9% of eligible women.

Discussion: One in five eligible Ni-Vanuatu women have undergone cervical screening since 2015, with 7.6 per 1000 women having a malignant result and 40.4 per 1000 women having a high grade or possible high grade result.



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Community utilisation of the Diabetes Support Program at Wan Smolbag Theatre, Shefa Province 2019-2021

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Abstract

Background: The Wan Smolbag (WSB) Diabetes Support Program was established in 2018 out of a local need to provide an integrated and holistic approach to diabetes care for WSB staff. Working with healthcare workers, WSB nutrition staff developed a program to support behavioural change through nutrition and physical activity counselling. The aim of this study was to conduct a descriptive analysis of the Program participants and its utilisation.

Methods: Records were kept for each patient visit. Individual files were then collated into a single database for data familiarization and preliminary analysis. A descriptive statistical analysis was then performed of participants diagnoses, demographic information and disease status. Ethical review was not obtained as this was a routine programmatic data analysis of de-identified data.

Results: Between 2019 and 2021, 127 participants accessed the program (690 total visits). Demographic and visit data were missing in each patient file. Analysis was conducted on available data for each variable. Two thirds of referrals to the program were for high blood sugar, others were referred for high blood pressure, weight management or preventive health support. The average attendance to the program was 5.5 visits (range = 1-52). The program facilitated 33 unique referrals to the NCD Unit and private medical clinics for follow-up including medication, foot care and eye checks.

Discussion: Although the sample size for the study is relatively small, our findings provide valuable insight into the profile of patient who may access such a program alongside their usual care. A typical person attending the program is likely to be overweight or obese, have higher than normal blood sugar and is unlikely to be taking medication. Diabetes care in Vanuatu is complex and there is a need for locally-led care with an interdisciplinary approach.



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Road traffic injury could be minimized when individual road users take more responsibility for their safety and the safety of others”: Perception of Healthcare Workers in Vanuatu

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Abstract

Background: Around 1.35 million deaths are caused by Road Traffic Injuries (RTIs) each year. This study aimed to explore the perceptions of Vanuatu's Health Care Workers (HCWs) regarding the existing preventative strategies for RTI.

Methods: This study employed qualitative methods that used Focus Group Discussions (FGDs) to gather data from HCWs in 2020. Self-identified Ni-Vanuatu HCWs who have been serving for over 6 months and residing at the study setting were included in this study. Purposive sampling was used to recruit study participants from three main hospitals in Vanuatu. A semi-structured open-ended questionnaire was designed to guide the FGDs. Data obtained were sorted out using thematic analysis processed with some preconceived themes based on theory, and also allowing the data to determine new themes.

Results: Data saturation was reached from conducting 5 FGDs with 22 HCWs who were emergency nurses and doctors as well as public health officers. Five main themes and sixteen subthemes were generated from the study. The main themes include the significance and trends of RTI, barriers to effective care, pre-hospital management capacity, barriers to pre-hospital care and addressing RTI. The findings suggest that addressing health institutional leadership and resources will improve prevention of RTIs.

Discussion: Prevention of RTIs is hindered by the lack of health institutional capacities in terms of leadership and, resources that include emergency equipment, financial and trained human resources. The health sector should consider developing stronger leadership in road safety to be an essential part of its core business.



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Surveillance of COVID-19 outbreak at Vila Central Hospital, Vanuatu, March-August 2022

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Abstract

Introduction: Vila Central Hospital (VCH) is the national referral hospital in Vanuatu. On 4th March 2022, the first community case of COVID-19 in Vanuatu was detected in an admitted patient. VCH immediately established testing in all wards. The Infection Prevention and Control Unit was tasked to activate surveillance and report daily COVID-19 cases, hospitalisations and deaths. The purpose of this study was to describe hospitalisations for COVID-19 at VCH from March to August 2022.

Methods: All people presenting to the ED or admitted to VCH were tested for COVID-19 on arrival/admission and the result was recorded in the admission book. A surveillance officer visited all wards and collected COVID-19 status from admission books (daily from March to April and weekly May to August). An online surveillance database, go. Data, was used to record line-listed information for each case, including hospitalisations and outcome (recovery or death). COVID-19 related-deaths were reported via a VCH death verification committee with deaths recorded in go. Data.

Results: There were 214 cases hospitalised at VCH with COVID-19, among which 64 (29%) were admitted due to COVID-19 infection. 81 pregnant women were hospitalised with COVID-19, but only 1 for COVID-19. 50% of admissions for COVID-19 were fully vaccinated. 68% of hospitalised cases were female and the average age was 32 years. 74% of all hospitalised cases had mild severity but 37% of cases hospitalised for COVID-19 had severe infection. Six people died due to COVID-19 at VCH. The peak hospitalisation rate was in Epi Week 9 and has steadily decreased since.

Discussion: There was a high percentage of mild infections. Challenges to documentation and reporting in wards was experienced and this may have led to underestimates of the true number of hospitalised patients. A limitation of the surveillance database is lack of detailed clinical and management information; electronic patient records would be useful to improve data and reporting.



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Strengthening community level primary health care in Vanuatu: a trial of output-based incentives for Village Health Workers

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Abstract

Background: The Health Sector Strategy (2021-2030) reaffirms the Ministry of Health's commitment to strengthening Primary Health Care, through evidence-informed, strategic allocation of resources. In 2019, the Village Health Worker Program commenced a trial to use annual incentive payments as a means to strengthen Primary Health Care at the community-level, through Village Health Worker (VHW)-led community engagement and health promotion activities. The national Health Information System (HIS) collects monthly activity reports from Aid Posts, which collate clinical consultations, community engagement and health promotion/disease prevention activities led by VHWs.

Methods: An analysis of annual HIS data from all Aid Posts (n=204) over four years (2018-2021, inclusive of baseline) sought to explore changes in output against key eligibility criteria for the incentive payments, namely: • Submission rates for Monthly HIS • Community-engagement/ participatory activities led by VHWs • Community health awareness activities conducted by VHWs (improved WASH, family planning, promotion of healthy lifestyles). • Support to visiting outreach activities from MCH, vector control or immunization teams.

Results: HIS data confirmed sustained, positive impact with incentive payments on VHW output. Specifically, graphical representations demonstrate improved outputs for: reporting; community-participatory clean-up activities; delivery of health education and awareness presentations; family planning discussions and referrals; VHW support to visiting public health teams.

Discussion: The incentive payments had a measurable, positive influence on VHW performance, both in terms of reporting and output. The relatively small investment in recognizing VHWs' performance makes a significant contribution to delivery of Primary Health Care services at the community-level. This investment is enhanced through improved program contact and communication with the VHWs.



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Improving understanding of the hepatitis B cascade of care in Vanuatu

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Abstract

Background: Hepatitis B presents a significant burden globally. In Vanuatu, 13% of the population (33,289 people) are estimated to be living with chronic hepatitis B (CHB) and liver cancer, a proportion of which is due to CHB, causes approximately 40 deaths per year. Hepatitis B is vaccine preventable and <70% of children in Vanuatu received the hepatitis B third dose in 2021. WHO has targeted elimination of hepatitis B as a public health threat by 2030 and have set several targets to achieve elimination including 90% childhood vaccine coverage, 90% diagnosed, and 80% of eligible cases in treatment.

Methods: Here we assess routine availability of data to measure progress towards reaching elimination targets. The study design is a retrospective data scoping and mapping review. Existing routine data reporting forms submitted to the Health Information System (HIS), Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) and the sexually transmitted infections, tuberculosis, human immunodeficiency virus (STI/TB/HIV) Units were reviewed to identify relevant data.

Results: Available data include childhood vaccination coverage and STI and hepatitis B antenatal screening, however data were not reported from all health facilities. Facility specific data, including testing and treatment, may be available on a facility-by-facility basis but there is no regular data flow from all levels of health facility to the national program.

Discussion: This data scoping review identified a major need to improve data collection and reporting to improve understanding of hepatitis B in Vanuatu and guide response efforts. An annual hepatitis B elimination scorecard is proposed to be developed to track the progress against national, regional, and global indicators in the areas of diagnosis, treatment and prevention with data disaggregated by province, sex, and age group.



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Measuring the efficacy of phone monitoring of travellers in quarantine in 2021 in Shefa Province

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Abstract

Background: In order to improve the efficiency and reduce the costs of quarantine processes, the Vanuatu Ministry of Health introduced the Vanuatu Electronic Traveller System in 2021. VETS was designed to guide travellers throughout the process of travel to Vanuatu. Prior to introducing VETS, quarantine monitoring was conducted face-to-face by health staff to assess potential COVID19 symptoms and evaluate well-being of travellers. Limited staff and resources meant this was an overly time-consuming and costly process. A key component of VETS therefore was to introduce phone monitoring instead. Travellers were called and assessed by Shefa Health staff a minimum of three times during their 14-day quarantine stay.

Methods: Here we evaluate the response rate of phone monitoring of travellers in quarantine recorded on VETS. During 2021, the "Quarantine Module" of VETS was used to collect and store travellers' quarantine monitoring responses including Symptoms Monitoring as well as Mental Health Psychosocial Support (MHPSS) monitoring for "Vulnerable" people. For our research, monitoring data was extracted from VETS aggregated and analyzed.

Results: Throughout 2021, a total of 3,893 travellers were registered on VETS. Out of these, 2,646 travellers were recorded on VETS as having been monitored for COVID19 symptoms at least once during their quarantine stay equating to a 68% monitoring response rate. Monitoring of Vulnerable peoples via MHPSS was slightly higher with 70% of people recorded as having been monitored at least once during their quarantine stay.

Discussion: The gap observed in monitoring response rates is indicative of some issues and challenges experienced with quarantine phone monitoring. Among other things, these include connectivity issues, incorrect phone numbers, non-responsive phones. This calls for a need to strengthen processes and systems for similar activities in the future. Despite these challenges, the benefits of phone monitoring outweigh the costly and time-consuming processes associated with face-to-face monitoring.



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Creating a more robust, inclusive, and sustainable food system for population health in Vanuatu

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Abstract

Background Ensuring adequate nutrition and food security is increasingly recognised as a priority concern for population health in Vanuatu. With the transition to diets high in imported foods, Vanuatu faces the triple burden of malnutrition – overnutrition, undernutrition and micronutrient deficiencies – and nutrition-related non-communicable diseases such as diabetes and heart disease. Increasing availability of, and access to, nutritious fresh food is therefore an imperative for improving population health into the future. This requires a food system – from farm to table – that is more robust, inclusive, and sustainable. There are many barriers to such a food system, however, including natural disasters and the impacts of climate change; and the impact of factors such as pandemics and geopolitical events on supply chains; and trade and tax policy impacts on food quality and supply, to name a few.

Methods: Recognising the imperative for multi-sectoral, multi-scalar action to support food system change, key actors from government and UN agencies in health and agriculture collaborated to run a series of national dialogues, as part of the global United Nations Food Systems Summit in 2021. This paper presents the outcomes of focus group discussions undertaken with over 60 private, non-government and community services sectors stakeholders to identify key areas for action.

Results: The three key areas identified by the participants were: ● Leadership and Governance ● Improved Diets and Food Environment. ● Resilient Food Systems and Livelihoods.

Discussion: Ensuring access to healthy and nutritious food for all Ni-Vanuatu requires multi-sector, multi-scalar actions. Leadership and governance were identified as the foundation for food system change. This paper explores the challenges and opportunities for multi-sectoral food system governance in Vanuatu and considers the implications for improved population health.



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Evaluation of antibiotic prescribing patterns among inpatients at the Northern Provincial Hospital medical ward-a retrospective study

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Abstract

Background: The excessive and inappropriate use of antimicrobial agents in human health is contributing to worldwide antibiotic resistance. Clinicians are frequently faced with the dilemma of whether or not to prescribe antibiotics. On many an occasion, they yield to the pressure of prescribing antibiotics, even when the diagnosis is unclear. There is growing concern amongst our staff that we may be overly reliant on ceftriaxone because of its broad-spectrum cover and convenient dosing. It is the only 3rd generation cephalosporin available in the Vanuatu essential drug list and overuse risks exhausting our antibacterial arsenal. There is a need to establish baseline data on our local prescribing patterns upon which we may draw to help rationalize our use of antimicrobials in the future.

Methods: We conducted a retrospective observational study on all inpatients admitted at the Northern Provincial Hospital (NPH) medical ward or isolation ward during the 3-month period from March to May 2022. Patients were identified from the ward admission register and clinical information collected from patient records. Data entry and analysis was done on Microsoft excel spread sheet.

Results: A total of 75 patients were admitted to both the medical and isolation ward during the period of interest. The antibiotic prescription rate was 71%. The three most commonly prescribed antibiotics were ceftriaxone (66%), intravenous Penicillin G (26%) and cloxacillin (23%). The most common conditions for which antibiotics were prescribed were respiratory infections (26%), leptospirosis (25%) and acute febrile illness (21%).

Discussion: There are varying rates of inpatient antibiotic prescription in literature ranging from 52% (1) to 60% (2). Our prescription rate of 71% is comparatively high. The preference for ceftriaxone is cause for concern. There is a need to implement antibiotic stewardship programs in the department to help combat antibiotic resistance.



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Understanding the impact of micronutrient deficiencies on birth outcomes in Vanuatu and in the wider Western Pacific

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Abstract

Background: Micronutrient deficiencies (MDs) refer to suboptimal dietary intake of micronutrients such as vitamin A, folic acid (folate) and iron. MDs during pregnancy are associated with higher risks of birth defects (BDs) which are linked to stillbirths, neonatal and infant deaths (SNIDs). SNID risk is on average seven times greater for children born in Pacific Island Countries and Territories (PICTs) relative to those born in neighbouring countries (Australia and New Zealand). This study aimed to map and identify key concepts and gaps in MDs and BD research in PICTs to better understand the basis for increased SNIDs risk in the Western Pacific.

Methods: Scoping reviews were undertaken to establish current knowledge relating to MDs and BDs in Vanuatu and 15 other PICTs (defined by WHO). Published research was collected through PubMed, Medline and OVID search engines using internationally recognised scoping review guidelines (PRISMA-ScR). Grey literature was omitted. Thematic analysis was performed using Covidence software to generate descriptive numerical summaries of all identified research.

Results: We identified 95 peer-reviewed studies published across the last 52 years focusing on MDs or BDs in PICTs. Most research focused on Papua New Guinea (48%) or the Solomon Islands (10%). In this time, Vanuatu was represented in 7 research studies focusing on MDs and has never been represented in any peer-reviewed BD research. Our data further shows that while research into MDs in PICTs has increased over the last two decades, BD research in PICTs has not increased in the last 20 years.

Discussion: PICTs are underrepresented in global BD and MD research. It is critical that we endeavour to understand more about the impact of MD associated BDs on SNID rates in PICTs to empower local communities to safeguard the health and wellbeing of all children born in Vanuatu and the wider Western Pacific.



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Engaging youth voice in decision-making through U-Report

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Abstract

Background: UNICEF, in collaboration with the Ministry of Health, Education & Training, and the Youth Development & Sports together with Youth Challenge Vanuatu have facilitated rolling out U-Report project in Vanuatu. It empowers young people to share opinions on the different critical issues, like Covid-19, stigma due to Covid-19 infection and other issues affecting the youth, which may be used by the policy makers as evidence to strategize the government policies to make it more youth friendly. Over 20 million young people are members of U-Report and growing worldwide. 91 countries are live, and more are in the pipeline.

Methods: The U-Report platform is pivoted on to two main platforms, which have a wider acceptance in Vanuatu. It includes SMS and Facebook messenger. Of the three polls conducted in Vanuatu, an assessment of the perceptions on COVID-19 vaccine for children/adolescents was the latest in series.

Results: The recent poll on child/adolescent COVID-19 vaccine indicates, women participating more actively compared to men and suggesting 70% of the respondents (out of 430) having taken two shots and a booster dose. 74% of the respondents being aware of the introduction of COVID-19 vaccine for 12-17 years and indicating radio (31%), health workers (30%) and social media (22%) as a key source of information to them.

Discussion: With the penetration of these platforms, using tools like U-Report makes it easier to seek a wider perspective from the community, in a short duration and to enable government to have better insights on various issues. Though a large percentage confirmed having taken the vaccine, they in fact mentioned, side effects, safety concerns and church as some reasons. It highlighted the need to re-strategize response to further improve upon the vaccine footprints. However, supplementing the tool with qualitative approaches will provide a more robust insight.



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Assessing Public Awareness around the De-Centralized Model of Care in Shefa Province in 2022

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Abstract

Background: To improve the efficiency and equity of health care delivery in Vanuatu, the Vanuatu Ministry of Health has adopted a decentralized model of care in line with Vanuatu's Decentralization Act of 1994. Key to this model is the establishment of a referral pathway, outlined in the Role Delineation Policy of the Ministry of Health, which aims to guide a patient's journey through the healthcare system to refer them to the most appropriate health facility depending on their specific health needs. It is unclear whether this referral pathway is understood by the public. The aim of this study is to gauge the public's level of understanding of the decentralized model of care to better raise awareness and educate the public.

Methods: Shefa Community Health Services conducted a KAP (Knowledge Attitude, Practices) survey during three public gathering events in Port Vila between July and October 2022. A total of 280 people participated in this survey. Questions asked during the survey captured people's attitudes towards Health Services, assessed their healthcare seeking practices and assessed their knowledge around decentralization and the referral pathway.

Results: When asked what they would do if they fell sick, 80% of respondents said they would seek health services. However, only half of survey respondents knew of the health facility hierarchy. Two third of people surveyed were unaware of the decentralized model of care and of those that did know about it, less than half were aware of the need to obtain a referral letter prior to admission to hospital.

Discussion: Survey results suggest there is still work to be done to better educate the public around the decentralized model of care and the referral pathway. Public awareness strategies such as community awareness campaigns and social media campaigns should be considered to address this gap.



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Low investigation rate of Leptospirosis cases reported in Vanuatu from 2020-2022

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Abstract

Background: Leptospirosis is a bacterial infection transmitted from animals to humans which can cause symptoms such as fever, chills, headache, muscle aches, vomiting and diarrhoea. Since 2020, an increase in leptospirosis cases have been reported from all provinces among adults and children. The notification process in Vanuatu is for a medical officer to submit a notification to the provincial surveillance officer, and for the provincial surveillance officer to complete the case investigation. The number of notification forms received should equal the number of investigation forms. We sought to assess if all leptospirosis cases notified were investigated as they should be. All sentinel sites are required to report on notifiable diseases thus Leptospirosis included.

Methods: Notifications during the time period of interest were extracted from the Leptospirosis line list; the line list comprises of all notifications that were notified to provincial surveillance officers collated nationally. Investigation forms were collected via email. Investigation rates were calculated by dividing the number of investigations by the number of notifications, stratified by province and year.

Results: A total of 170 cases of leptospirosis were notified between May 2020 and July 2022, among which 9 (5%) were investigated. Investigation rates were lowest in Sanma province (3.5%) and highest in Shefa Province (28%). The year that had the lowest investigation rate was in 2021 and the highest investigation rate is in year 2022.

Conclusion: The impact of low investigation results in control and prevention measures not being implemented thus outbreak is ongoing. Further investigation is warranted to determine the reasons for the low investigation rate to ensure that leptospirosis outbreaks are effectively managed.



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Analysis of outpatient antibiotic consumption at Vila Central Hospital over four years

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Abstract

Background: Throughout the Coronavirus pandemic, antimicrobial resistance (AMR) has remained a persistent presence continuing to challenge global public health. Imprudent antibiotic use is a key driver. The WHO Global Action Plan on AMR recommends the provision of antimicrobial stewardship programmes (ASPs) to guide the optimization of antimicrobial medicines. Surveillance and analysis of antibiotic consumption is an important component of ASPs. Our study aim was to examine outpatient antibiotic consumption at Vila Central Hospital (VCH) between 2018 and 2019.

Methods: Data on antibiotics dispensed to outpatients during the study period were obtained from the hospital pharmacy database. We used the WHO's Anatomical Therapeutic Classification/ defined daily dose (DDDs) index, and the changing annual population of the hospital's catchment area to calculate monthly consumption. The results were expressed as DDDs per 1000 inhabitants per day (DIDs).

Results: Ten antibiotics listed on the Vanuatu Essential Medicines List were analysed. This included antibiotics classified as either Access or Watch. Annual DIDs ranged from 47.08 (2018) to 50.5 (2021) with mean monthly DIDs between 3.92 (2018) and 4.2 (2021). The penicillins were the most frequently prescribed antibiotics accounting for approximately 70% of the total annually. AWaRe Watch antibiotics made up slightly less than 7% each year.

Discussion: The findings of our study indicated a small increase in DIDs over the study period, though this was not statistically significant. To our knowledge this is one of the first studies on outpatient antibiotic consumption to be conducted in Vanuatu and the Region. Whilst our results cannot be generalised to other health settings in Vanuatu, they do provide a baseline for future work. We recommend regular monitoring and analysis of antibiotic consumption be performed in all health settings in Vanuatu. Sharing and reporting results will inform local and national ASPs and policy decisions.



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WASH in schools in Vanuatu; moving from pilot to national scale

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Abstract

Background: Enhanced WASH services and hygiene education at schools is a key strategy to adopted improved hygiene practices for current and future generations and will contribute to make communities more resilient to climate change and future pandemics.

Methods: The Ministry of Education and Training of the Government of Vanuatu with support of UNICEF implemented a pilot in PENAMA province targeting all (62) primary and (12) secondary schools to improve the WASH services from 2019-2022. The pilot aimed to improve WASH services by empowering schools to driver their own improvements process. Schools were trained and received materials to assess, plan and construct improved WASH services at their own schools and improve hygiene education practices. This pilot was complimented with supporting the enabling environment at national level, creating the conditions for national scale.

Results: This pilot was highly successful, as all 74 schools were able to make significant improvements in their WASH services. The monitoring mechanism used, the 3-star monitoring framework, shows that all schools were able to make significant improvements, and the average score increased from 0.9 stars to 2.0 stars. The pilot has demonstrated, that if schools are adequately empowered and supported, they can drive their own improvement process. The inputs provided at national level have also been instrumental in strengthening the enabling environment, which assisted in re-opening of schools after school closure due to community outbreak of COVID-19.

Discussion: In 2020, the Ministry of Education adopted access to equitable WASH services into its 10-year strategy, and targets to achieve 100% equitable quality services by 2030. The learnings of this pilot are fundamental to inform a national implementation framework and upscaled WASH in schools program across the six provinces of Vanuatu.



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Descriptive analysis of national tuberculosis data, Vanuatu, 2016 to 2020

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Abstract

Background: Tuberculosis (TB) continues to be major public health problem throughout the world. A quarter of the world's population is infected with Mycobacterium Tuberculosis and is at risk of developing the disease. Approximately 15,000-20,000 people are diagnosed with TB in the Pacific annually, and 15% more unreported.

Methods: Descriptive analysis of all forms of TB, clinically diagnosed and bacteriologically confirmed, are presented. Provincial TB officers report registered cases to the National TB Unit through an online registry every quarter. Epidemiological data received at the National TB Unit from 2016 to 2020 were analyzed according to person, place, and time.

Results: A total of 450 cases of Tuberculosis were reported from 2016 to 2020 (range:101 in 2016 to 75 in 2020). Of these cases, 55% were male. Younger age groups accounted for more TB reported, with 36% of total cases reported among people 15-34 years. Six percent of total cases are under the age of 4 years. TB notification rate in 2016-2020 was 37, 33, 32, 32 and 25 per 100,000 population, respectively. Provincial specific incidence varied, with Tafea and Shefa reporting higher burden and 70% of total cases, including 5 resistant TB cases. Treatment success rate was 77% in 2019 and 99% in 2020. Estimated case detection rate was 98% in 2016 while 84% in 2019.

Discussion: The TB case notifications rate decreased during the reporting period, however the case detection rate also decreased during this period. This suggests that the downward trend in cases may be misrepresentative of the true TB situation and that there remain unidentified, and therefore untreated, TB cases in the community. Thorough follow up of all cases as well as active case finding in areas with historically high case numbers is needed to understand the true burden of TB and to limit community spread.



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Understanding health workers' views on addressing the unmet need for family planning in Guadalcanal, Solomon Islands

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Abstract

Background: It is estimated that in the Pacific region, unmet need for family planning is among the highest in the world. This study supports access to family planning based on evidence that impacts of contraceptive use range from improved health to socioeconomic benefits and sustainable development. This study hears from health workers providing essential family planning care to women in Guadalcanal, Solomon Islands. This region was chosen for this study as it has a subnational disparity of highest unmet need for family planning in the Solomon Islands.

Methods: This mixed methods study was based on an exploratory descriptive research approach using a survey, which was distributed to health workers at rural and urban health centres. Fifty-six surveys comprised of 32 questions, both open and closed-ended, were completed and analysed. This included three demographic questions.

Results: Health workers identified multiple structural, social, and service-driven barriers to meeting the contraceptive needs of women in their communities. Structural barriers include gender inequity and religious influence. Social and service barriers that may be more amenable to influence include misinformation and fear about contraceptive side effects; contraceptive stigma; and access to contraceptive training and education for health workers. Health workers expressed eagerness to address the unmet need for contraception in their communities and are a resource that should be prioritised in programs seeking to expand access to contraception in the Solomon Islands.

Discussion: This study affirms health workers as key resource, addressing the unmet need for contraception and calls for program and policy solutions informed by their perspectives. The two main priorities they emphasised to help tackle the persistent problem of unmet need for contraception are an increase in their capability to provide contraceptive implants, and an increase in community education to boost acceptance of family planning care from women and their families.



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Comparing “Fixed-Site” and “Mobile-Site” COVID-19 vaccine delivery strategies in reaching vulnerable peoples in Vanuatu

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Abstract

Background: On June 2nd 2021 Vanuatu launched its COVID-19 vaccination campaign. As part of this effort, two vaccine delivery strategies were implemented. A “Fixed-Site” strategy was first implemented in provincial centers such as Port Vila and Luganville, whereby vaccinations took place at a central immunization site. A “Mobile-Site” strategy was also adopted later in the campaign particularly in rural and remote areas. Here we compare the effectiveness of these two strategies in reaching “vulnerable” peoples (i.e., elderly people 55 years and above, people living with disability and people with known underlying condition).

Methods: An integral part of the COVID19 Vaccination campaign has been the electronic immunization registry (EIR) which registered and tracked all vaccine recipients. Notably, the EIR collected and stored key demographic information relating to vulnerability status of vaccine recipients including age, disability status and underlying condition status as well as the type of vaccine delivery strategy used. In order to conduct our study, data from the EIR was extracted, de-identified, aggregated and analyzed.

Results: A total of 99,570 client registrations were analyzed. Key findings include elderly people (55 years and above) were 24% more likely to be reached through mobile sites. This was even more pronounced for older groups with people 75 years and above being 43% more likely to be reached through mobile sites. Also of note, people with underlying condition were 14% more likely and people with disability were 10% more likely to be reached through mobile sites respectively.

Conclusion: The higher proportional rate of vulnerable populations vaccinated through mobile sites highlights the importance of implementing diverse vaccine delivery strategies in order to provide health services in an inclusive manner.



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Vanuatu health care workers' attitudes to COVID-19 during community outbreak

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Abstract

Background: The Vanuatu Ministry of Health declared a community transmission of COVID-19 on March 4th, 2022. From 2020, the Mental Health Team conducted awareness sessions for Health Care Workers (HCWs) Team Leads on what to expect from teams before, during and after a community outbreak. Here we collected HCW responses from a survey for more insight.

Methods: A 24-questions online survey using Google Forms was sent to HCWs during the community outbreak in March 2022. Answers to these questions were grouped into four (4) thematic areas and analysed: 1. Knowledge and Access to information and resources 2. HCW's Confidence and Perception towards COVID-19 3. Stigma 4. Mental Wellbeing.

Results: Of the total eligible respondents (n=58), about half got information regarding COVID-19 from Ministry of Health updates. They requested more information on managing COVID-19 patients because they felt they did not have enough training to look after a COVID-19 patient. HCWs expressed increased confidence through training on Personal Protective Equipment (PPE) use and self-administering COVID-19 rapid antigen test. HCWs think that wearing an N95 mask protects them from the virus but feel there was insufficient PPE made available to them and therefore use other forms of treatment to protect themselves against COVID-19. Despite the increased hours of work performed by HCW, half of the respondents were conscious of and practiced self-care. Many experienced stigmas as HCWs and expressed their greatest fear of transmitting the virus to their family.

Discussion: Although this survey provides insights into Vanuatu HCWs concerns, attitudes, and challenges during the COVID-19 community outbreak, it highlights essential areas for HCW Team Leaders to consider and support HCWs in so that they may be able to perform their duties effectively.



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Investigation of an outbreak of arthritis and conjunctivitis of unknown origin in Central Pentecost

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Abstract

Background: The national surveillance unit of the Ministry of Health was notified in June 2018 about an outbreak of suspected dengue cases (based on joint pain, muscle pain and conjunctivitis) in Central Pentecost. Dengue tests conducted were negative. Outbreaks with similar symptoms were reported in the same areas in 2012, 2014 and 2016.

Methods: The investigation team interviewed the nurses from the two health centers (HC) where cases were reported. HC registers were reviewed for arthritis cases recorded. Active cases in communities were interviewed and a line list created. Data were analysed with Excel.

Results: Interviews with nurses and review of registers showed a temporal and spatial relationship between cases of diarrhoea/dysentery and cases of arthritis. Investigation of active cases showed that out of 25 patients, 60% were males, 67% were over 35 years-old, 84% reported joint pain, 76% conjunctivitis. After follow-up investigation of 11 patients, 67% (6/9) reported swollen joint. Most patients mentioned an episode of diarrhoea or dysentery about a week before the onset of arthritis. Most affected patients were not able to walk for several weeks.

Discussion: Reactive arthritis following gastrointestinal infections by *Campylobacter*, *Shigella* and *Salmonella* and characterized by inflammation of joints and tissues have been described in the literature. An epidemic of reactive arthritis in Vanuatu was reported in 1991-1992 at Vila Central Hospital associating oligo-arthritis, conjunctivitis, and diarrhoea. In this study, there was a significant association with HLA-B27 positive patients. Melanesian population have some of the highest prevalence in the world (23% in Vanuatu). A similar outbreak of reactive arthritis was reported in South-West Santo in 2019. Awareness in the general population and training of health care workers should be conducted. Further research is needed to identify areas and populations at risk in Vanuatu.



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The Growing Cost of Surgical Interventions for Diabetes Treatment at Vila Central Hospital

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Abstract

Background Preventing and treating Non-Communicable Diseases (NCDs) such as diabetes is largely funded by the recurrent budget and donor partners of the Ministry of Health (MoH). There have been an increasing number of admissions for Diabetic Foot Sepsis (DFS) to Vila Central Hospital (VCH) as well as increasing number of diabetic related lower limb amputations. The aim of this study is to measure the baseline treatment cost of managing inpatient diabetic foot sepsis (DFS). We specifically analyse the cost of antibiotic usage and wound dressing during 2017-2021 period and compare with 2016 data.

Methods: This study was conducted in the surgical ward of tertiary care unit of VCH supported by key statistics provided by national government, WHO, MOH annual reports, Vanuatu Ministry of Health - Budget and Expenditure Trend Analysis (2016-2021) and VCH annual reports. A descriptive analysis was performed using health information systems (HIS) databases of MoH (Covid-19 Registry, Routine health Information system, Patient Information System, VCH surgical ward admission registry book and mSupply).

Results: 1. The total number of diabetic related lower limb amputations in 2016 was 22. Our findings show there has been a significant increase with an average of 57 amputations reported annually during 2017-2021 period. 2. Debridement is a common surgical procedure for diabetic foot sepsis (DFS). In 2016, there were 62 admissions for DFS to VCH. This number has doubled in 2021 with 121 admissions.

Conclusion The number of admissions and the cost associated with treating diabetic patients has significantly increased over the last few years. This worrying trend highlights the need for improved early detection and early intervention of diabetes to curb this increasing disease burden.



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Change in acuity observed following implementation of the Interagency Integrated Triage Tool at Vila Central Hospital Emergency Department, Shefa Province, 2021-2022

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Abstract

Background: Hospital triage systems are used to quickly identify and prioritise patient care according to acuity. In mid-2021, the Emergency Department (ED) at Vila Central Hospital (VCH) implemented a modified version of the Interagency Integrated Triage Tool (IITT), developed by the WHO, ICRC, and MSF. This research project aims to describe patient presentations to the VCH ED using electronic data of the IITT at VCH Emergency Department over time.

Methods: ED clinicians completed the IITT paper-based registration form for each new patient. Data collected included: patient demographics, presentation, observation, acuity (defined Category 1: Emergency, Category 2: Priority, Category 3: Non-Urgent), treatment, and patient disposition (defined as patient outcome including admission, discharge or deceased). Registration forms were then entered into a custom electronic database. Electronic data was available from June 2021. Descriptive analysis of acuity was conducted for the period June 2021-June 2022 (13 months).

Results: A total of 14,932 presentations to ED between June 2021-June 2022, with an average of 1149 presentations per month and no significant change in the number of presentations over time. The proportion of all presentations that were Category 1 (Emergency) decreased from 85% in June 2021 to 5% in June 2022. The proportion of all presentations that were Category 3 (Non-Urgent) increased from 1% of in June 2021 to 67% in June 2022.

Discussion: There was considerable change in the acuity of patient presentations during the first year of implementation of the IITT. It is not known if the increase in Category 3 cases over time is due to under-triaging (categorisation of a patient at a lower level than what they should be given), previous over-triaging or increase in accurate triaging due to successful implementation of the IITT tool. It is recommended that this is further explored.



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Vila Central Hospital baseline data on hand hygiene from June to July 2022

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Abstract

Background: Appropriate Hand Hygiene (HH) is a key measure to stop the transmission of Healthcare Associated Infection (HAI). Studies have shown that, HH practices by healthcare workers can significantly reduce HAI. Vila Central Hospital (VCH) implemented a WHO approved “5 moments for hand hygiene” model to improve hand hygiene in the hospital.

Methods: A baseline audit was conducted to assess compliance rates for each of the five hand hygiene moments included in the model. The hand hygiene audit was conducted in three wards in VCH: Neonatal Intensive Care Unit (NICU), Surgical, and Medical, between June and July 2022. Six IPC personnel were trained as Gold Standard Auditors'. They used a hand hygiene audit tool adapted by Pacific Community (SPC) from Hand Hygiene Australia to assess correct and missed moments of hand hygiene that were performed by healthcare workers. This tool identified five key hand hygiene moments in patient treatment – before touching the patient, before cleaning and aseptic procedures, after body fluid exposure, after touching a patient and after touching patient surroundings.

Results: Across the three wards a total of 595 hand hygiene moments were observed. Compliance rates were 34%, 8% and 26% in the NICU, surgical and medical wards, respectively. For each of the five key moments, compliance rates were 17% (moment 1), 30% (moment 2), 32% (moment 3), 22% (moment 4) and 11% (moment 5), respectively.

Discussion: These data suggested that hand hygiene compliance was sub-optimal. This was evident across all wards observed. To further enhance hand hygiene at VCH, a multimodal hand hygiene strategy should be implemented that includes education, interventions, ongoing auditing, and feedback.



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A community prevalence study to measure the level of under-detection of COVID-19 on Efate Island, Vanuatu

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Abstract

Background: COVID-19 is a notifiable condition in Vanuatu whereby medical officers must report all newly detected cases of COVID-19 to health authorities. On 4/3/2022, Vanuatu received its first locally acquired COVID-19 on Efate Island, and there were >2000 cases detected and reported to the Vanuatu Ministry of Health's Surveillance Unit between 3/4/2022-7/3/2022. It was recognized that the true number of cases detected and notified were likely to be under-estimated. The purpose of this study was to estimate the level of COVID-19 under-detection on Efate Island during the first month of community transmission to support surveillance activities.

Methods: We conducted a cross-sectional SARS-CoV-2 prevalence study in two geographic administrative areas in the capital (Port Vila, Efate) between 9/4/2022 and 23/4/2022. All residents in the geographic areas were eligible and invited to participate. Trained nurses and public health teams conducted a demographic and behavioural interview and collected nasal specimen. Specimens were tested by PCR. Data were recorded in a Google Sheets database.

Results: A total of 251 people from 57 households participated in the study from a total of 363 eligible people (participation rate 69%). Among the 251 participants, the COVID-19 status was known for 187 (75%) participants and 104 participants (56%) were found to be COVID-19 positive. Among these cases, only 12% had been previously notified to the surveillance unit. A total of 84 participants that were COVID-19 positive (81% of all positive) had symptoms among which only 31% (37% of participants with symptoms) had been tested

Discussion: Within the first few weeks of community transmission, more than half of participants in the selected areas had evidence of COVID-19 infection however most SARS-CoV-2 infections went undetected. The number of cases in Efate is estimated to be 8-11 times higher than what is included in official case numbers.



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Evaluation of a digital tool to screen for COVID-19 symptoms among international travellers entering Vanuatu requiring quarantine, 2020

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Abstract

Background: Since March 2020, all travellers to Vanuatu must complete 14 days quarantine in a government-designated facility to prevent importation of coronavirus disease 2019 (COVID-19). A short message service (SMS, or "text message") system was developed to identify COVID-19-associated symptom development among travellers in quarantine.

Methods: A trial within cohort study design was conducted with travellers arriving to Vanuatu by air (27/10/2020-7/12/ 2020). Control group participants received standard monitoring (daily in-person visits). Intervention group participants received a daily SMS requesting a response coded for symptom development.

Results: A total of 423 of 495 eligible travellers participated, 170 and 253 participants were allocated to the control and intervention group, respectively. A return SMS was received from 50% of participants that received a SMS. Less than 2% of the intervention group and 0% of the control group reported symptoms.

Discussion: The SMS intervention had a high level of acceptability. SMS is a useful tool to monitor symptom develop among people in quarantine and broader public health programs that require participant follow up.



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The need for control of antibiotics for the prevention and management of antimicrobial resistance (AMR)

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Abstract

Background: Antimicrobial resistance (AMR) is of significant global concern. It occurs when pathogens become resistant to drugs used to treat them due to misuse and overuse of antimicrobials. This makes treating infections more difficult and expensive. This study aims to characterise resistance patterns in two antimicrobial resistant organisms isolated at Northern Provincial Hospital Laboratory (NPHL) from 2016-2022. It is hoped that by characterising the prevalence of these organisms, processes can be put in place to help limit the problem in Vanuatu.

Method: Retrospective study. Laboratory technicians isolate AMR organisms (Methicillin Resistant Staphylococcus aureus (MRSA) and Extended spectrum beta lactamases (ESBL) bacteria from different patients' samples that were determined using antibiotic sensitivity test. MRSA were detected using cefoxitin disk. ESBL producing Escherichia coli, Klebsiella pneumoniae, Enterobacter spp., Citrobacter spp. and Proteus spp. were confirmed by double disk diffusion. The growth inhibitory zones were measured via cefotaxime and ceftazidime disks with and without clavulanic acid. Data were collected from NPHL Registry book from 2016-2022 and were further analysed using Microsoft word Excel sheet.

Results: A total of 1661 pathogens were isolated. Twenty-two (1.3%) were found to be anti-microbial resistant organisms. There were 5 MRSA, and 17 ESBL (ten Escherichia coli, three Klebsiella pneumoniae, two Enterobacter spp., one Citrobacter spp. and one Proteus spp.) All MRSA showed resistance to Cefoxitin. Whilst all ESBL cases showed resistance to Ceftriaxone, Augmentin, Ampicillin, Gentamicin, Ciprofloxacin, and Doxycycline.

Discussion: Antimicrobial resistance is an increasing global problem. These data show growing evidence for the presence of these organisms in Vanuatu. This could have significant consequences for cost effective clinical management and patient outcomes. It is suggested that expanding scope of Microbiology Laboratory testing, strengthening communication channels between clinicians, infection prevention and control (IPC) and improving guidelines around the use of anti-biotics is necessary to control this emerging problem.



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The association between early initiation of antenatal care and birth outcomes in teenage mothers at Northern Provincial Hospital in Santo, 2021-2022

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Abstract

Background: Antenatal services can be important for teenage mothers as they promote and maintain the wellbeing of the mother and baby through education on nutrition, personal hygiene, breastfeeding, family planning and birthing process. It also helps to detect and manage complications during pregnancy whether medical, surgical, or obstetrical. The aim of this study is to propose a framework for making early antenatal care in teenage mothers as an effective strategy to promote safe motherhood in the Northern Provincial Hospital.

Methods: This study uses retrospective data collected from client's files and charts between January 2021 to July 2022 among teenage women under the age of 19 years of age before 12 weeks of gestation initiating antenatal care at the northern provincial hospital in Santo.

Results: The prevalence of teenage pregnancies in this study represented 11% of total pregnancies; (n=262, -(; age 13 to 19 years). -72% of teenage mothers had their first appointment at the antenatal clinic in their second trimester. Delivery outcomes showed that 3% were considered significantly preterm delivery, 2% were moderately preterm, -9% were late preterm and 87% were delivered at full term (37-40 weeks). Birth outcome showed that 82% of deliveries were normal vaginal deliveries, whilst 80% had some form of intervention. Of this cohort 1% of babies born to teenage mothers had extremely low birth weight, 6% had very low birth weight, 13% had low birth weight and 80% had normal weight.

Conclusion: Late booking remains a challenge to improve the maternal health in Northern Provincial Hospital. Therefore, health education/ awareness and creating policies for early initiations to antenatal services for teenage pregnancy is significant for optimal birth outcome.



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Assessment of the use and acceptability of electronic disease notification forms piloted during the COVID-19 response in Vanuatu, 2022

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Abstract

Background: The primary method for disease notification in Vanuatu is completion of paper forms or telephone notification to provincial surveillance officers. In 2022, an online notification form for COVID-19 was piloted to reduce reporting delays and missing reports. All government and private health care workers (HCWs) were requested to submit an online form for each newly detected COVID-19.

Methods: We conducted an assessment of the knowledge, attitudes, and practices of HCWs in Vanuatu to help inform future developments for notification processes. All HCW in Vanuatu were invited to participate, including government and private. Recruitment occurred between August-September 2022. All HCWs were emailed a link to an electronic survey and provincial HCW were also telephoned with the option of a telephone interview. The survey assessed knowledge of the notification system, practices used to make COVID-19 notifications, acceptability of electronic notification systems and information, communication, and telecommunications equipment availability. Data were collated and analysed using Google Sheets.

Results: A total of 52 HCWs participated; the majority were from Shefa (39%) and Sanma (43%). Knowledge of notifiable diseases varied; half (49%) of participants knew that leptospirosis was notifiable, and three-quarters (73%) incorrectly reported that diabetes was notifiable. During the COVID-19 outbreak, three-quarters (77%) of participants routinely reported cases with reasons for not notifying including not knowing the requirement (38%) or having too many priorities (21%). Half (52%) of participants lacked regular computer access however 90% have access to a mobile phone.

Discussion: These findings suggest knowledge of notification processes awareness of notifiable diseases needs to be strengthened. It is recommended that the electronic notification system is expanded to other notifiable diseases but that notifications by mobile phones are explored. Additional research is needed in smaller provinces to fully grasp their context and their views on the use of electronic notification systems.



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Comparing self-reported rates of Non-Communicable Diseases (NCD) among people self-identifying as living with a disability to the broader population during the Vanuatu COVID-19 vaccination rollout (2021–2022)

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Abstract

Background: Several epidemiological studies have demonstrated that people living with disability may be at higher risk of being affected by an underlying condition(s). Here we evaluate the self-reported rates of non-communicable diseases (NCDs) such as hypertension and diabetes among COVID19 vaccine recipients living with a disability and compare these to self-reported rates among the broader population.

Methods: The data source was Vanuatu's COVID-19 electronic vaccination registry which was implemented in 2021 to support the implementation of the COVID19 vaccination program. The registry contains key health-related information of COVID19 vaccine recipients such as disability as well as incidence of NCDs affecting recipients, specifically, hypertension, diabetes, asthma, cardiac issues, and kidney disease. This information was self-reported and reviewed by a clinician as part of the registration process. A total of 143,388 adult vaccine client registrations (registered between June 2021 and August 2022) were extracted and de-identified. We analyzed the number of people who have indicated living with a disability who also reported having at least one NCD and compare these figures with the incidence of NCD among the broader population

Results: Of the client registrations analyzed, 2,742 (2%) reported living with a disability. Among these, 20% (538) also reported having at least one NCD. This is in sharp contrast to self-reported rates among people who do not have a disability with 7% self-reporting at least one NCD. The most disparate self-reported rates were observed for diabetes, with almost 4 times higher reporting rates among people living with disability compared to the general population

Discussion: Self-reported rates of NCDs among people who self-identified as living with disability is nearly 3 times higher compared to people not living with disability. This data strongly suggests that people living with a disability in Vanuatu have a higher disease burden compared to the broader population.



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The Missing Cog? -Synchronizing the Cogs of Multi-Sectoral Operation in Vanuatu during an ever-changing Health Pandemic in 2020-2022

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Abstract

Background: In early 2020, the novel coronavirus (2019-nCoV) was declared a Public Health Emergency of International Concern (WHO) resulting in immediate protective action from countries across the world.

Methods: Following the lead from many neighbouring Pacific countries, the National Disaster Management Office declared a State of Emergency in March 2020 and implemented border measures such as restriction of travel to citizens only and a requirement of < 14-days quarantine on arrival in order to protect and prevent the importation of the infectious SARS-CoV-2 virus into Vanuatu.

Results: The first phase of the travel restrictions and the repatriation of stranded Vanuatu citizens was conducted in March-June 2020 and concluded with an after-action review (AAR) conducted in July 2020. Findings from the AAR indicated that coordination between all government departments, partners and key stakeholders involved in all the repatriation processes (pre-arrival, arrival, quarantine, monitoring and testing, isolation) needed better alignment and strengthening of coordination in order to improve operational outcomes. As a result, the missing cog was created, a Multi-Sectoral, Inter-Agency Coordination focal point to bring together and strengthen the operation as part of the Vanuatu Government's preparedness to respond, contain and protect the country from any possible imported cases.

Discussion: The missing cog provides the lessons learnt from the coordination of quarantine in Vanuatu during the COVID-19 pandemic in order to build awareness and strengthen preparedness between all stakeholders in the event of further global public health emergencies.



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Integrated curative and public oral health school outreach to Penama Province: An evaluation of implementing the Health Promoting Schools Program in rural Vanuatu

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Abstract

Background: Dental caries and periodontal diseases remain amongst the highest of preventable lifestyle diseases in developing nations and are a challenge for Vanuatu's under resourced curative and public oral health services. The National Oral Health Survey (NOHS) reveals the seriousness of dental problems in remote as well as the urban areas. Efforts in oral health prevention and curative services are mostly centered in the main towns of Port Vila and Luganville. Child oral health programs are being implemented under the umbrella of the Health Promoting Schools (HPS) and the Gudfala Tut Skul (GTSP) programs, both of which advocate for early intervention and prevention.

Methods: This report is based on the outcomes of a school based Integrated Oral, Eye, ENT outreach to Penama Province. The outreach was a collaboration between curative services and public health under the HPS initiative. Schools across the 10 area councils of Penama province were targeted for program implementation. Children were screened, given awareness of basic oral health and hygiene principles, toothbrushing demonstration and provided with toothbrush and toothpaste kits. Pain relieving dental extractions were offered at these locations. Data was collected on standard HPS treatment need forms.

Results: Data from 14 schools and surrounding communities was captured across 8 Area Councils. A total of 1355 students were screened along with 289 adults. 1496 students received oral health awareness and 787 received supervised brushing instructions. 2110 oral hygiene kits were distributed. 77% of the pain relief extractions involved adults. Consequently, there is a high proportion of untreated dental disease in children who have been screened and require follow-up.

Discussion: Dental pain relief treatment factored into a school screening program in rural Vanuatu has its challenges given the severe lack of dental human resource. Adults with chronic dental pain out-accessed the service over children. Guidelines for rural oral health outreach should ensure all vulnerable groups have access to mobile dental services. A conceptual framework is proposed as a result of this report.



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The prevalence of MDR-TB among TB admissions in Tafea province: A retrospective study done from 2018-2022

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Ministry of Health, Lenakel, Vanuatu

Abstract

Background: Multi-Drug Resistant Tuberculosis (MDR-TB) is an epidemic threat to people's life in TAFEA province. It is a result of inadequate treatment of tuberculosis. Patients may acquire resistance to several drugs from repetition of this process, or transmission through contact. Management TB values screening, diagnosing TB and completing treatment. The objective of the study is to cover the prevalence of MDR-TB in TB patients in Tafea Province and to study the etiology of the disease.

Methods: We used data collected from National Tuberculosis Registry Records dating back to 2018 in Tafea Province only. A sample size of 111 people. Age group varying from birth to 60 years and more. Variables used in the registry were strictly for TB patients only, including their demographics, age grouping, history of treatment, risk factors, MDR-TB status, treatment plan, the lengths of stay, and the overall outcome of the patient management.

Results: Research showed an overall prevalence of 2% of MDR-TB in our study population, all of which were newly diagnosed, 4% of patients were relapse. 92% of the population completed treatment and follow up, though there was a 4% death during course of treatment, and 2% absconded from treatment. The Highest prevalence of TB came from highly populated areas West Tanna with 18% followed by North Tanna with 13% of its admission, Central Tanna with 11%, areas with high density population and are more culture oriented.

Discussion: Contrary to findings, over a four-year period, a total of 111 TB patients were treated for TB, an average of 22 admissions every year since 2018. Though treatment was successful for most, only 4% died and 2% did not complete treatment. There was no MDR-TB for relapse and incomplete treatment. And only 2% of the study population were MDR-TB which were newly diagnosed.



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Struggling, Surviving or Thriving – A new way to manage incontinence for people with disabilities in Vanuatu

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Abstract

Background: In 2019 World Vision Vanuatu and partners conducted a study of more than 56,000 individuals which found that people with disabilities were twice as likely to experience incontinence as people without disabilities. As there is no word for incontinence in Bislama, most people experiencing incontinence do not talk to health workers or family about the challenges they face and tend to manage in silence due to shame and fear of being a burden to others. Healthcare workers reported limited understanding of disability and incontinence with restrictions to community participation and limiting consumption of food and water cited as main strategies to manage incontinence.

Methods: In order to provide support to the 33% of people with disabilities who experience incontinence more than three times each week, an innovative, locally made portable toilet chair was designed and constructed from recycled materials and trialled at homes across Shefa province. Portable toilet chairs were customized to meet the needs of people with visual and mobility impairments in both rural and urban locations. Once delivered, a key-informant interview survey was carried out to determine any improvements to overall quality of life for users and their families.

Results: The innovative portable toilet chair significantly improved the lives of users with 81% of recipients reporting increased independence, safety, privacy, and dignity with managing incontinence through the use of the commode chair inside their home at night and during periods of bad weather.

Discussion: This locally-built portable toilet chair has provided a sustainable and climate smart solution that has resulted in a significant, positive, and meaningful impact on the quality of lives of people with disability in Vanuatu and would be a useful solution to consider for people who acquire a disability through amputations as a result of rapidly increasing rates of NCD's in Vanuatu.



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Comparing self-reported rates of hypertension during the Vanuatu COVID-19 vaccination rollout (2021 – 2022) with the 2011 WHO Vanuatu country profile hypertension statistics

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Abstract

Background: Hypertension, defined by WHO as having systolic blood pressure of ≥ 140 mmHg and/or having diastolic blood pressure of ≥ 90 mmHg, is a leading cause of death across the world. Over one-quarter of Vanuatu's adult population are estimated to have hypertension. Approximately 85% of people living with hypertension are unaware they have the condition. Left undetected, hypertension can lead to development and exacerbation of other conditions such as kidney disease and cardiovascular disease.

Methods: Here we evaluate self-reporting of hypertension among COVID-19 vaccine recipients between 25 and 64 years of age and compare with WHO statistics, to better understand the level of under-reporting of hypertension in Vanuatu. Vanuatu's electronic immunization registry (EIR) for COVID-19 was used to extract data. The registry collected demographic and other health-related information of COVID-19 vaccine recipients such as underlying conditions including hypertension. This information was self-reported and reviewed by a medical officer. We extracted, de-identified, aggregated a total of 102,358 adult registrations (aged between 25 and 64 years) and analyzed the rate of self-reported hypertension and compared these figures with WHO's most recent hypertension fact sheet (2011).

Results: Out of these, 3,329 (3.3%) reported having high-blood pressure, significantly different from the 28% estimated by WHO. Therefore 88% of vaccine recipients suffering from hypertension were unaware or did not report their condition during their pre-vaccination medical assessment. The rate of under-reporting was greatest among 25-34 years (96%) and lowest among people 55-64 years (81%). Self-reported rates of hypertension also varied widely between provinces with the highest rate in Shefa province (4.3%) and the lowest rate in Torba province (1.4%).

Discussion: Self-reported rates of high-blood pressure among vaccine recipients is in line with WHO statistics published in 2011. Work is required to increase detection, including training of health care workers and risk communication messages.



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Strengths and barriers to inclusive health service delivery in the Vanuatu Health Sector

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Abstract

Background The Health Sector Strategy 2021-2030, launched in August 2021 seeks to ensure all people of Vanuatu who need health services receive them, including women, girls, children, and vulnerable groups such as people with disability in Vanuatu, without undue financial hardship. A sectoral review conducted in November 2021 identified the strengths, barriers to achieving the inclusive health objectives of the HSS towards inclusive health service delivery in Vanuatu

Methods: Primary and secondary data collection. Stakeholder engagement and participatory consultation with 64 key informants (29 females, 34 males and one person identifying with diverse sexual orientation, gender identity and expression) from across three provinces, and representing national and provincial government and MOH, development partner and non-government stakeholders. Issue identification and data verification was achieved through dedicated Focus Group Discussions with health users - women, men, youth, and people with disability at the community level.

Result: The review identified four outstanding findings: 1) shifts in the policy environment present new opportunities to progress the inclusive health agenda; 2) people with disability face significant barriers to receiving health services; 3) the concept of inclusion is not well understood within the health sector, requiring awareness, education, and training at all levels; 4) external stakeholders (such as the Vanuatu Health Program and NGO stakeholders) have expertise in inclusion and can support the achievement of an inclusive health system.

Discussion: The sectoral review on inclusive health opportunities and barriers within the health sector points to recent policy shifts towards a more enabling environment for the attainment of universal health coverage and the delivery of inclusive health services. A unique window of opportunity has opened in which sectoral leaders have prioritised efforts to strengthen inclusion, and there is an imperative for development partners to lend technical, operational, and resourcing support to bolster government allocations to these efforts.



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Leaving no-one behind: Improving menstrual health for people with intellectual disabilities and their caregivers in emergencies, Sanma, Vanuatu (2020-2022)

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Abstract

Background: There is increasing recognition in health and humanitarian sectors alike of the need to prioritise menstrual health (MH) especially in emergencies. The unique MH needs of people with disability have only begun to be considered. However, even these limited considerations have not extended to people with intellectual disabilities who require more holistic, customised support.

Methods: This study conducted in Sanma Province, Vanuatu (2020-2021) utilised a systematized review, and formative research to identify what evidence exists about the barriers to, and interventions for MH for people with disabilities in emergencies? And what approaches could be used to improve menstrual health in future emergencies? We applied purposive sampling to select 17 women and girls (aged 15-31) with intellectual disabilities and their caregivers and seven key informants.

Results: Findings illustrated the impact intellectual disability has on a young person to manage their menstruation with dignity during an emergency. There was a desire among caregivers to maintain young person's safety and privacy, especially when menstruating, which reduced evacuation options. Young people's support requirements sometimes increased after emergencies, so caregivers were less able to work. Caregivers requested more reusable menstrual materials and greater choice of materials. Key informants highlighted the need to deliver MH interventions before emergencies so people were familiar with different sanitary products.

Discussion: These findings reveal how discrimination intersects gender, disability, and menstruation and negatively impacts the ability of women and girls with intellectual disabilities to participate in daily life and seek safety in emergencies. The impacts are also felt by caregivers, who stay at home with the young people, thus reducing their potential to earn an income. This cycle of income poverty, declining mental health, and reduced ability to work push families further into poverty every time another natural disaster occurs in a country that experiences regular emergencies.



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Leveraging community health workers in scaling up diabetic retinopathy screening in Fiji: a qualitative study

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Abstract

Background: Community Health Workers (CHWs) are effective in sensitizing people to diabetes mellitus (DM) and diabetic retinopathy (DR). In Fiji, CHWs were trained in a one-day Diabetic Retinopathy (DR) awareness to provide communities with adequate basic knowledge about DM and DR to improve awareness and enhance referrals for DR screening and treatment. This study aimed to explore the impact of this training on CHW's knowledge of DR and their referral practices related to DR screening in Fiji two years post-training.

Methods: This qualitative study was conducted in 2021 across the 3 out of the four administrative divisions of Fiji, namely the Western, Northern, and Central divisions. A total of 14 CHWs from the 3 divisions of Fiji participated. All participants had attended a one-day DR awareness training 2 years before this study. Participants were chosen purposively and were invited to participate in Focus Group Discussion (FGD). The FGD was audio-recorded and transcribed verbatim, and thematic analysis was conducted to identify and classify recurrent themes.

Results: Knowledge about both DM and DR improved significantly after the training. This boosted their confidence in talking about these issues and providing clarity regarding referrals for DR screening in their respective communities. Consequently, they have significantly referred a higher number of people for screening both in outreach and to health facilities. Challenges in referral included poverty, high transportation cost, and social support needs which hindered screening. Further, CHWs felt some degree of integration within the health system and felt more was needed to be done in this aspect.

Conclusion: Investing in scalable models such as training CHWs is an important first step in tackling diabetes and DR in communities, particularly at the grassroots level in low-resource settings by increasing the community's knowledge of DR and improving access to screening, diagnosis, and treatment.



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Assessing the advantages and limitations of implementing telehealth in Vanuatu

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Abstract

Telehealth is one big topic that has not only gotten attention from many developing countries but also from developed countries. It is a way of providing healthcare services through the use of the internet. Telehealth has been seen to be very useful in places where there is no doctor, healthcare professional, or healthcare specialist. In places where there are no healthcare facilities, there is a growing need to use telehealth services to provide healthcare services to that underserved population. There is an increase in the growing need for quality and accessible healthcare services for all the people in Vanuatu, causing the government to develop strategies that can be implemented to meet those needs. Many people do not have good access to quality and accessible healthcare services. This forced people to live with minor health conditions that later developed into chronic diseases and death. People were mostly consulted by a physician at the very late stages of their health conditions, creating a difficult phase of recovery. The country's land mass with its many scattered islands has contributed to the challenges of accessing quality and accessible healthcare services. Telehealth can contribute to providing quality and accessible healthcare services to the population of Vanuatu. Studies on the country and its readiness to accept and implement telehealth are necessary. Therefore, as such, identifying the advantages and limitations of implementing telehealth in Vanuatu can be a good start. The methodology used in this research is the qualitative systematic review of the literature. Articles were collected for three groups of countries including developing countries, low-resource countries, and Pacific island countries. The advantages and limitations of telehealth implementation have been searched in these articles. These advantages and limitations are recommended advantages and limitations that can be used in Vanuatu for the implementation of telehealth.



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Prevention of Waterborne Disease: Safe Drinking Water

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Abstract

Background: Safe drinking water is key to preventing common diseases such as diarrhea, typhoid, cholera, hepatitis, giardia, dysentery, and stunting. Water quality data from the Department of Water Resources (DoWR) database indicates that more than 60% of water sources are contaminated with E. coli (feces) at source or collection point.

Methods: To improve the quality of drinking water DoWR in collaboration with MoH, UNICEF, Hexagon Specialists and Engineers Without Borders have created a Water Quality Management training for Village Health Workers (VHW). The training covers sources of contamination, water quality monitoring and treatment, communication, and the creation of an action plan for the VHW to provide awareness to communities. The training has been piloted in Sanma province. The aim of this study was to review the training package before it is rolled out to other provinces. At the end of the training participants were asked to fill in a training evaluation form. The results from the survey are presented below.

Results: Most participants strongly agreed that they understood the importance of water quality, know what a Drinking Water Safety and Security Plan is, know ways to treat water and can make awareness on water quality to communities. Participants either agreed or strongly agreed that they understood water quality monitoring, testing and how to create an action plan. These very positive results indicate that the training was well received and of good quality.

Discussion: This training is key to assist health workers and communities to understand the importance of safe drinking water. The training package will be updated following the feedback from participants and after 6 months – 1 year a follow up workshop will be held to understand if the VHW action plans are being implemented in communities to improve health outcomes for all.



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An Infection Prevention and Control Perspective of COVID -19 Outbreak Response at Vila Central Hospital, Vanuatu

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Abstract

Background: The COVID-19 cases presenting and hospitalized at Vila Central Hospital (VCH) from March to April 2022 not only challenged disease control and emergency management practices, but also impacted the Infection Prevention and Control (IPC) program at VCH. The role of the IPC unit is to support delivery of healthcare services by reducing transmission of COVID-19 within VCH, including surveillance and guidance on transmission-based precautions, isolation practices, use of personal protective equipment (PPE) and other IPC measures.

Methods: To understand the strengths and challenges of the COVID-19 response from an IPC perspective, an Intra Action Review (IAR) of the response to COVID -19 outbreak was conducted by the IPC unit at VCH. An IAR meeting was held in June 2022 with all Nursing In Charge of VCH and the IPC unit. An IAR is "a qualitative review of actions undertaken so far to respond to an ongoing emergency as a means of identifying gaps, lessons and best practices in order to improve the response plan" (World Health Organization, 2020). Three key questions addressed are: what went well?; what did not go well?; and, how could this be improved?

Results: Best practices identified by the IAR were: clear direction from the Emergency Operation Centre, strong operational teamwork within VCH and provision of training for VCH staff on correct use of PPE, managing COVID-19 patients and use of new equipment from surge support. Challenges identified were that nurses, doctors, and cleaners were over-worked and some were infected with COVID-19, increasing pressure on remaining staff. Furthermore, some hospital infrastructure did not meet the required IPC standard.

Discussion: There is a need to strengthen staff training on IPC practices. Hospital wards need to be designed to meet IPC isolation standards for any future outbreak.



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Development of updated guidance for TB treatment partners in Malampa Province.

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Abstract

Background: Since the ministry of health introduced the community DOTS in Vanuatu, a high number of deaths related to TB are still recorded in Malampa province. However, TB is treatable and exploring the treatment outcomes and the cause of deaths between 2015 and 2021 would help to address this important public health issue, for the health benefits of people in Malampa as a whole.

Methods: The data were collected from the Malampa updated TB registry book, from 2015 to 2021. A line list was created to enter different variables, such as ID number of patients, age, sex, address, positive or negative TB from microscopic smear results, extra-pulmonary TB, year of treatment, the treatment outcome and the remarks. The Data cleaning was conducted before analysis using the Excel.

Results: Fifty of TB cases (all type) were recorded from 2015 to 2021. Most cases were from Malekula were 94%, 6% from Ambrym and no cases from Paama island. Males (56%) were more affected than the females were (46%). The age group of over 50 years-old (52%), were more affected than below 50 years-old were (48%). There were 28% of smear positive cases, 28% were smear negative cases, and 44% of extra-pulmonary cases. In overall, the treatment outcomes were: 24% cured, 46% were completed well the treatment, 28% died and 2% defaulted. Among the smear positive patients, only 24% were cured and 4% died with other contributing health conditions. Among the extra-pulmonary and smear negative cases there were 22% deaths, 2% defaulters and only 50% who completed their treatment successfully.

Discussion: In overall the number of deaths and defaulters show poor of compliance and adherence to treatment. In order to improve the treatment outcome, we propose to develop a new guidance for treatment of partners which can be used to strengthen community DOTS.



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Congenital Talipes Equinovarus in Vanuatu

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Abstract

Background: Congenital Talipes Equinovarus (Clubfoot) is a foot deformity often managed using the Ponseti Method and surgery. Ponseti is a global 'clubfoot treatment' standard for treating severe foot deformity. Factors such as the severity of deformity, number of casts applied, whether the foot underwent surgery and whether brace compliance protocol was adhered are directly related to whether a child can walk normally and pain-free. **Aim:** This study aims to describe how the Ponseti method has been issued in the management of children treated with Clubfoot at Vila Central Hospital

Methods: We reviewed all children with congenital clubfoot treated with the Ponseti method at the Physiotherapy clinic over a 10-year period, from January 1st 2011 to December 31st 2021. 111 cases of children born with clubfoot were analysed, 81 males and 30 females. Information about their age, gender, initial Pirani score, number of feet treated (unilateral or bilateral), number children who had casting done with or without surgery and compliance with bracing were investigated.

Results: There were 111 clubfoot cases (171 feet) in total that underwent the Ponseti method during the study period. Males (73%) were more affected than females (27%). 86 children born with clubfoot presented before 3 months of age, most of whom (94%) came with severe foot deformity. With the Ponseti method, 16% had serial casting only and went straight to bracing while 80% had casting and tenotomy and bracing. Despite early management using the Ponseti method, 19 children had foot relapse by the age of 9 months.

Conclusion: We found that males were more affected by Congenital Talipes Equinovarus than females. We also found that brace compliance and the lack of orthosis had more effect on relapse rate for children with clubfoot under 2 years than did early presentation and high levels of severity.

ACTIONABLE RECOMMENDATIONS

Topic	Recommendations	Directorate
Antibiotic resistance	Implement antibiotic stewardship programs to help combat antibiotic resistance.	Curative
Antibiotic resistance	Build a picture of antibiotic consumption in Vanuatu across all health settings	Curative
Antibiotic resistance	Expand scope of Microbiology Laboratory testing	Curative
Antibiotic resistance	Combine VCH and NPH data for improved antibiotic resistance monitoring	Curative
Antibiotic resistance	Put into action what's been written in Vanuatu National Action plan on Antimicrobial Resistance 2021-2025 (strengthening antimicrobial stewardship programs)	Curative
Antibiotic resistance	Improve guidelines around the use of anti-biotics is necessary to control this emerging problem	Curative
Antibiotic resistance	Strengthen communication channels between Laboratory team, Clinicians, infection prevention and control (IPC) will help with antibiotic resistance	Curative
Collaboration	Maintain multi-sectoral collaboration through preparedness, planning regular conduct of emergency simulation exercises	MOH Executive
Collaboration	Health stakeholders and development partners have the expertise and mandate to support inclusive Health	Corporate
Disability and inclusion	MoH to take ownership of Disability Inclusion and incorporate Disability Inclusion into the MoH corporate structure - suggest a stand-alone unit under Public Health	Public Health
Disability and inclusion	MoH take proactive steps to revive and strengthen Disability Inclusion roles currently sponsored by SPC through provincial health	Public Health
Disability and inclusion	MoH HIS must incorporate a better record-keeping system to build an extensive database for people with disabilities to inform allied health officers, provincial healthcare workers, disability inclusion officers and village healthcare workers so they can deliver consistent inclusive health service at the community level	Corporate
Disability and inclusion	Suggest MoH support to strengthen the allied health unit to be able to follow up on people with acquired disabilities (after the rehabilitation phase) so that they have proper long-term access to inclusive health services after rehabilitation	Curative
Disability and inclusion	MoH must conduct a thorough assessment of VCH infrastructure to ensure that the National Hospital meets Inclusive building standards/codes (e.g. currently we have one inclusive bathroom between the medical, surgical and children's wards in the whole hospital)	Corporate
Emergency medicine	Emergency drugs MUST readily be available - Inventory and actions	Curative
Emergency medicine	Pharmacist to do daily rounds to see use of drugs	Curative
Emergency medicine	Explore the impacts of decentralization of OPD on VCH-ED	Curative
Emergency medicine	Explore options for an Electronic Medical Record (EMR) system in the future	Corporate
Emergency medicine	Investigate barriers to access and engagement	Public Health

Food security	Include MOH in food system strategy. As the food system change requires a multi- sectoral, multi-scalar, and multi-pronged approach.	Public Health
Health communication	TalkWalker can be a useful tool to better identify health rumors and mis/disinformation in the community	Public Health
Health communication	RCCE can provide data for health operations teams	Public Health
Health communication	Opportunity to continue strengthening youth engagement so they have a voice in decision making	Public Health
Health communication	SMS and other digital tools are effective and acceptable to use as a public health tool and can be used to monitor symptom development in people potentially exposed to infectious disease (such as TB, monkeypox and other outbreak-prone diseases)	Public Health
Health communication	Review distance to services and waiting time to increase access to childhood vaccines	Corporate
Health communication	Involve both mothers and fathers and their influencers in planning for additional vaccines	Public Health
Health communication	Continue to involve healthcare workers and strengthen their capacity to promote and recommend new vaccines.	Public Health
Health system	A communication campaign is needed to explain the decentralized model of care and the referral pathway.	Public Health
Health system	A follow-up survey should be conducted to assess understanding of decentralized care	Public Health
Healthcare workers	Provincial health officers to engage regularly with VHWs (supervisory visits, digital communication); promote awareness and understanding of the incentive payment eligibility criteria and program developments.	Public Health
Healthcare workers	HPOs and VHWP Officers, Zone Nurses and Health Information Officers to support VHWs to submit quality Monthly Aid Post Reporting Forms.	Public Health
Healthcare workers	VHWP to develop/distribute 2-3 VHWP newsletters each year and VHW Facebook page to promote the incentive payment eligibility criteria and program developments.	Public Health
Healthcare workers	A detailed analysis to be conducted at the end of 2023 to review the incentive payment scheme, including the payment amounts and the potential to introduce new output criteria with a focus on new and emerging health sector priorities.	Public Health
Infectious diseases	During an outbreak, it is important to raise community awareness and provide support around testing to reduce fear and hesitancy	Public Health
Infectious diseases	Improve communication with all testing sites and with medical officers to ensure that positive test results are reported to the Surveillance Unit as soon as possible	Curative
Infectious diseases	At the start of the outbreak, it would be beneficial to have additional testing sites (for example, bringing mobile testing to communities)	Curative
Infectious diseases	Electronic patient records would be useful to improve and strengthen reporting and analysis of further outbreaks to clearly define samples.	Corporate
Infectious diseases	Strengthen and support Surveillance unit in the Hospital	Public Health

Infectious diseases	Proper WASH facilities prevent outbreaks	Public Health
Infectious diseases	Community awareness is important to prevent outbreaks	Public Health
Infectious diseases	Improve data reporting through to the national level of all aspects along the cascade of care	Public Health
Infectious diseases	Collect hepatitis B data by province, sex, age, group, pregnancy status	Public Health
Infectious diseases	Develop an annual hepatitis B scorecard to track progress against indicators	Public Health
Infectious diseases	Increase provision of care for persons living with hepatitis B - including increase in testing, particularly amongst ANC mothers, timely birth dose vaccination, increase treatment now that tenofovir is available	Curative
Infectious diseases	Additional efforts are needed to follow up TB cases and contacts	Public Health
Infectious diseases	Provincial TB compliance is unknown and needs research	Public Health
Maternal and child health	Need an effective screening program to increase screening rate 70% of eligible women and 90% treatment rate of premalignant lesions. (WHO, 2018)	Curative
Maternal and child health	Test and treat HPV on the same day	Curative
Maternal and child health	Value Health workers relationships.	Corporate
Maternal and child health	Increase health workers' access to LARC training	Corporate
Maternal and child health	Increase public education and counter misinformation about family planning	Public Health
Maternal and child health	The recommendations from this study are in essence, very clear: support health workers to optimise their family planning care in their communities.	Curative
Maternal and child health	Encourage health workers' pride and ownership of their vital role, support their agency, and provide resources. Strong relationships are what make any system robust	
Maternal and child health	Support research and advocacy is important for sexual and reproductive health interventions	Curative
Maternal and child health	Integrate SRH education into existing programs (education, health, social welfare)	Public Health
Maternal and child health	Determine dietary profiles and micronutrient intakes by ni-Vanuatu women across urban, semi-rural and remote areas (through the MaMi Project)	Public Health
Maternal and child health	Record ni-Vanuatu experiences of birth defects and complications in urban, semi-rural and remote areas.	Public Health
Maternal and child health	Provide stable funding for comprehensive educational and support services to pregnant and parenting teenagers.	Public Health
Maternal and child health	Increase the awareness of timings of antenatal care utilization and increase access and availability of family planning method for preventing unintended pregnancy.	Public Health
Maternal and child health	Public health to collaborate with the ministry of education and other NGOs to involves this teenage talks/ programs in school and our communities including churches, youths, men's and women's group.	Public Health

Maternal and child health	Strengthen policies and procedures that guarantee client confidentiality	Public Health
Maternal and child health	Budget for research	Public Health
Maternal and child health	Midwives and nurses require refresher training on postpartum haemorrhage	Curative
Maternal and child health	Syntocinon and misoprostol must be made available at health centers and dispensaries	Corporate
Non-communicable diseases	Evaluate effectiveness of community-healthcare partnered lifestyle interventions in managing diabetes risk	Curative
Non-communicable diseases	Strengthen referral pathways with community healthcare	Curative
Non-communicable diseases	Include Wan Smol Bag in WHO PEN training, skill building workshops and research training	Public Health
Non-communicable diseases	Recognize higher NCD risk among people living with disability	Curative
Non-communicable diseases	Directly measure NCD prevalence in order to determine the rate of under-reporting of NCDs among people living with disability	Public Health
Non-communicable diseases	Research why NCD rates are higher in people living with disability	Public Health
Non-communicable diseases	Improve screening activities to diagnose hypertension	Public Health
Non-communicable diseases	There is a high need for provincial dental care	Curative
Non-communicable diseases	Separating community and school programs is ideal to address both the early intervention and chronic curative issues	Public Health
Public health emergency	Public Health Emergency National Alert system should be utilized as a platform for different stages of multi-sectoral engagement, decision-making, resource allocation and funding	Public Health
Public health emergency	Core stakeholders and agencies are kept updated with regular refresher training on public health measures and potential threats	Public Health
Public health emergency	Public Health legislation must clearly mandate role delineation and responsibilities for partners, civil societies, and government departments; government officer secondments; resource allocation and funding; and incident management	Public Health
Public health emergency	MoH to support and strengthen the Point of Entry Compliance Officer role at Shefa Provincial Health to support the current national Health Security Officer to meet IHR implementation requirements at international points of entry	Public Health

Public health emergency	MoH Corporate to recruit a legal officer to review, make recommendations and advise on changes to current Public Health legislative matters	Public Health
Public health emergency	Review the Public Health Act governing Road Safety regarding its implementation/enforcement to reduce Road Traffic Incidents	Public Health
Public health emergency	Follow up on the After Action Review recommendations regarding the review of the Public Health Act governing Public Health Emergency	Public Health
Public health emergency	Director of Public Health and the National Public Health unit review and finalise the MOU (current draft version at Shefa Health) between MoH Public Health and Local Authorities regarding the delegation of roles/responsibilities to Provincial Area Administrators and Area Secretaries so they are able to conduct public health compliance duties and issue fines and penalties on behalf of public health officers	Public Health
Research	To enable good progress on a prioritized health research agenda for Vanuatu, a committee should be established to assist with the next steps as defined by the interim working group	MOH Executive
Research	Work towards a prioritized research agenda must align with the Health Sector Strategy and enable adaptability to the evolving health situation plus adequately reflect partner support	MOH Executive
Research	Active participation in development of the research agenda by staff across the three directorates is required to ensure it is representative, appropriate and actionable	MOH Executive
Road safety	Roll out evidence base programs to address driver behaviours	Public Health
Road traffic injury	Establish pre-hospital emergency response networks and care systems	Curative
Road traffic injury	Capacity building for hospital emergency workers	Curative
Road traffic injury	Address emergency department's leadership, human resources and equipment issues	Corporate
Road traffic injury	Step up awareness programs through workshops and campaigns in all municipalities to educate all the vehicle drivers and road users on road safety issues	Public Health
Telehealth	Undertake more studies in the area of telehealth to better understand the benefits and barriers and its implementation before thinking of implementing telehealth	Corporate
Vaccination	Use mobile vaccine campaigns to more effectively reach vulnerable populations (i.e. elderly and people living with disability).	Public Health
Vaccination	Research the cost-benefit of mobile vaccine campaigns	Public Health
Vaccination	Use the Incentives Payment scheme to improve output and performance in Villange Health Workers (This has implications for all public health programs seeking to mobilise and engage communities in health promotion activities, and to have a way of monitoring these.)	Corporate

Water, sanitation and hygiene	Include Disability Inclusive elements (such as sturdy seat risers, handrails, ramped access and increased space for wheelchairs) in the National Sanitation Guidelines for construction of VIP Latrines for people with disabilities in Vanuatu.	Public Health
Water, sanitation and hygiene	Include Accessible Modifications (based on universal design principles – such as ramped access, handrails and provision of accessible toilets and bathrooms) in the National Health Care Facilities across Vanuatu.	Corporate
Water, sanitation and hygiene	Build capacity at provincial level for Community Health Inclusion Officers to ensure improved access to health care for people with disabilities through existing community health outreach programs.	Corporate
Water, sanitation and hygiene	Roll out the WASH school pilot to all provinces	Corporate
Water, sanitation and hygiene	Active participation is needed from MoET, DoWR, MoH, and DLA to scale the WASH school pilot	Corporate
Water, sanitation and hygiene	Conduct an analysis if the improved WASH conditions have contributed to improved academic results and community health	Corporate
Water, sanitation and hygiene	Support and provide on-going refresher trainings for staff on IPC practices and guidelines.	Curative
Water, sanitation and hygiene	Conduct on-going hospital assessments, audits on compliance IPC practises-to meet required standard.	Curative
Water, sanitation and hygiene	Health training opportunities and priority needs to improve hospital workforce gaps.	Corporate
Water, sanitation and hygiene	Hospital ward designed to meet IPC Isolation standards to better accommodate any future infectious disease outbreaks.	Corporate
Water, sanitation and hygiene	Need consistent hand hygiene supplies (hand tissue, liquid soap, single hand towel, hand sanitizer and pedal pin)	Corporate
Water, sanitation and hygiene	Need proper hand hygiene sink with the elbow tap	Corporate
Water, sanitation and hygiene	Need another Australian volunteer to support IPC training and Education	Corporate
Water, sanitation and hygiene	Assess staff risk including staff personal health and immunization status.	Corporate
Water, sanitation and hygiene	The portable toilet chair would be a useful solution to consider for people who acquire a disability through amputations as a result of rapidly increasing rates of NCD's in Vanuatu	Public Health
Water, sanitation and hygiene	Drinking water safety training is key to assist health workers and communities to understand the importance of safe drinking water.	Corporate
Water, sanitation and hygiene	Menstrual health efforts must take into account the holistic needs of people with intellectual disabilities at all stages of an emergency response including preparedness and needs to support young people to more independently manage menstruation with dignity and this must go beyond infrastructure.	Public Health

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