



**Ambulance Service
Papua New Guinea**

Submission to the Parliamentary Inquiry into Alcohol-Related Violence



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Executive Summary

Alcohol abuse and associated violence is an issue of significant concern in Papua New Guinea, with the emergence of widely available, locally produced high-strength low-cost (HSLC) alcohol fuelling the problem. Escalating rates of alcohol-related violence, as well as concerns regarding HSLC alcohol have attracted significant media attention in recent times, both locally and internationally.

The National Research Institute of Papua New Guinea produced a discussion paper addressing alcohol abuse in Papua New Guinea in 2011, summarising alcohol related concerns affecting the country. This paper put forward 10 key recommendations relating to review and enforcement of liquor laws, development of a national alcohol policy, education around alcohol related risks, the need for protection of women and girls, and the maintenance of reliable information databases.¹ A decade on however, the majority of these recommendations have not been realised.

As the country's primary emergency ambulance and medical response service, St John is alarmed by these trends and the impact that alcohol excess, as well as alcohol-related acts of violence are having on the physical, mental, and social wellbeing of our population. These issues affect us all, and St John is keen to work with Government and other stakeholders to move forward in a positive sustainable direction in this space.

The major issues St John identify are:

1. The lack of robust policies and legislative frameworks addressing the production, labelling, sale and consumption of alcohol throughout Papua New Guinea.
2. The significant increase in local production and distribution of high-strength low-cost (HSLC) alcohol.
3. The lack of community education surrounding safe alcohol consumption behaviours.
4. The growing economic cost to individuals, organisations and government of alcohol related illness, injuries, violence, and damage to infrastructure.
5. The strain that HSLC alcohol related injuries and illness place on an already fragile health system.

St John's recommendations to the Inquiry based on these key issues are:

1. Development of a National Alcohol Strategy in line with the WHO Global Strategy to Reduce the Harmful Use of Alcohol framework.
2. Implementation of minimum unit pricing for alcoholic beverages to stem the rise of high-strength low-cost alcohol.
3. Development of education programs surrounding safe alcohol consumption behaviours, with such programs embedded into school curriculum.
4. Ensure reliable and accountable enforcement of alcohol related policies and legislation, especially targeting legal blood alcohol level (BAC) limits whilst operating motor vehicles.

5. Raise taxation on alcohol and ensure transparent use of these funds to support alcohol – related public health measures.

Key Issues

Context of St John’s concerns regarding alcohol-related violence and HSLC alcohol, outlined as per the Terms of Reference of the inquiry:

Effectiveness of policies that are focused on addressing alcohol consumption

Papua New Guinea lacks robust policies and legislative frameworks addressing the production, labelling, sale and consumption of alcohol throughout the country. Whilst pandemic and political concerns have led to alcohol curfews and bans being implemented, such measures have not been taken with the express purpose of curbing alcohol fuelled violence and health and safety concerns relating to alcohol excess.

Amendments to Measure 9 (Business and Social) of the National Pandemic Control Measures in June 2021 saw the introduction of a nationwide alcohol curfew requiring licensed premises to abstain from selling takeaway alcohol Friday through Sunday, in a bid to minimise alcohol-related social gatherings in light of COVID-19 social distancing requirements.² Similar measures are being suggested in border provinces of East Sepik, West Sepik and Western during the national election, to curb alcohol related social unrest during the election period.³

Whilst such measures may alleviate short term alcohol related risks, they are not effective in combatting the more pervasive, long-term concerns regarding alcohol-related violence, social and health concerns. With alcohol consumption related policies unclear, poorly disseminated and unreliably enforced, their effectiveness is minimal.

Sale and consumption of cheap alcoholic drinks



There has been a significant increase in the local production and distribution of cheap alcoholic beverages throughout Papua New Guinea in recent times. The local alcohol market has been flooded with ‘pre-mix strong’ beverages, labelled at 10-18% Alc. Vol. and sold in 6 packs of 750ml – 2L bottles.⁴ These products are marketed to be drunk straight, and at over 70 standard drinks per purchase unit, they are exceptionally cheap, at PGK 80-140.⁴

Discrepancies between labelled and actual alcohol content of such products has garnered significant media attention. Recent laboratory analysis of several low-cost pre-mix alcoholic beverages carried out by the National Agriculture Research Institute found many of the tested beverages to have up to 10% higher alcohol content than stated on the label.⁵

The ready availability and widespread use of HSLC alcoholic drinks thus poses a significant health risk, with the added concern of incorrect or unreliable alcohol content labelling making it impossible for those using such products to make informed decisions regarding their consumption.

Legislations governing the production of cheap drinks with high alcohol content

Legislation regulating alcohol production has not been updated since the Liquor Licensing and Food Sanitation Act 1963.⁶ The current Act, which classifies alcohol content between zero and 7.3% as 'alcoholic', and that which is over 37% as 'spirit', provides a loophole for manufacturers, with no legal regulation of high-strength alcohol between these levels.⁷ This lack of legislation and regulation is highly concerning, as it is impossible to enforce or police that which is not regulated.

Education campaigns and their role in cultivating effective social change in terms of community attitudes to alcohol consumption

The importance of education around safe alcohol use and the potential harms of alcohol excess cannot be understated. The Australian National Alcohol Strategy provides a wonderful example, emphasizing the importance of education programs to raise awareness about the dangers of harmful drinking, as well as drink driving and the responsible service of alcohol.⁸ The strategy also highlights the need for prevention and early intervention strategies at a community level, to better educate and engage individuals, and promote healthy community attitudes and practices surrounding the use of alcohol.⁸

St John have been speaking out publicly about these issues for some time, however the recent increase in media coverage due to a spike in alcohol fuelled violence over the festive season has proved a timely opportunity.^{9,10,11} Whilst alcohol use is not a current focus of St John community education programs, it is discussed as a component of a number of outreach activities.¹² As an organisation dedicated to caring for the community, we are keen to engage in further education programs focusing on community attitudes towards alcohol consumption and safe alcohol use.

The role of parents in influencing the attitudes of young Papua New Guineas towards alcohol consumption

Education around safe alcohol consumption starts at an early age, and is particularly pertinent in Papua New Guinea, where the highest rate of binge drinking amongst alcohol users occurs in 15-19 year old males.¹³ This being the case, engaging parents in positive discussions around alcohol consumption in the home, and modelling safe alcohol use behaviours for their children is paramount.

The economic cost of alcohol related violence

The economic cost of alcohol related illness, injuries, violence, and damage to infrastructure in Papua New Guinea is almost impossible to estimate. At the 2011 National Alcohol Abuse Symposium in Port Moresby, then Acting Prime Minister, Hon. Sam Abal, stated that the total cost of alcohol related damage to infrastructure, loss of lives, injuries, and compensation for accidents cost the state some K78.5 million annually.¹



Since this time, no publicly available figures regarding these costs have been produced. It is difficult to adequately address a problem without first fully understanding its magnitude and reach. We must assume that given the growing prevalence of alcohol related health concerns and violence, related economic costs are also steadily rising, putting mounting pressure on a public system with already constrained financial resources.

From a St John perspective, the escalating number of alcohol related callouts, ambulance attendances and hospital presentations costs the organisation greatly, not to mention damage to St John property sustained as a result of alcohol fuelled violence. St John responded to over 1100 incidents involving violence in 2021. With many of these incidents speculated to be related to alcohol consumption, St John estimates the burden of alcohol on its services to have been PGK 800,000 - 1,000,000 in 2021. This is based on the average cost to St John per incident where a patient is responded to and/or transport to hospital being PGK 800.

Background / Evidence

The WHO Global Status Report on Alcohol and Health 2018 provides an overview of alcohol related issues affecting the world today, as well as country specific data and trends.¹³ Whilst having significantly lower per capita alcohol consumption than the Western Pacific Region, Papua New Guinea suffers from twice the rate of alcohol dependence and use disorders compared to its neighbouring countries. The Report indicates that whilst alcohol consumption is not necessarily mainstream in PNG, amongst those who do consume alcohol there are significant concerns. Worryingly, the Western Pacific is the only Region globally to have had an overall increase in alcohol consumption rate since the year 2000.¹³

Health concerns relating to alcohol excess

Alcohol is the 6th leading risk factor globally for preventable death, disease, and disability according to the latest Global Burden of Disease study.¹⁴ The harmful use of alcohol results in over 5% of all deaths worldwide, and over 130 million disability-adjusted life years (DALYs), with mortality resulting from alcohol consumption higher than that caused by tuberculosis, HIV/AIDS and diabetes.¹³

Despite this, little research has been conducted into the health impacts of alcohol consumption in Papua New Guinea. Work carried out at the Papua New Guinea Institute of Applied Social and Economic Research (IASER) in the late 1980s found that throughout Papua New Guinea a significant proportion of trauma was alcohol related, that continued ingestion of non-beverage alcohols (principally methanol) exacts a significant public health toll, and that patterns of alcohol consumption suggest that alcoholic cirrhosis and alcohol related cancers of the upper respiratory and upper digestive tracts will contribute to increased mortality among Papua New Guineans into the future.¹⁵ Unfortunately since the publication of this paper, there has been minimal further work conducted on the topic.

The WHO has estimated the alcohol attributed fraction of death rates secondary to liver cirrhosis, road traffic accidents and cancers in Papua New Guinea (see figure 1 below), however there are concerns as to the accuracy of such data.¹³ In order to adequately tackle the health implications of alcohol consumption, a significant body of work is required to better understand the breadth of the problem.

HEALTH CONSEQUENCES: MORTALITY AND MORBIDITY

Age-standardized death rates (ASDR) and alcohol-attributable fractions (AAF), 2016

	ASDR*		AAF (%)		AAD** (Number)
Liver cirrhosis, males / females	45.0	19.8	24.2	15.5	260
Road traffic injuries, males / females	32.2	13.8	17.5	10.5	184
Cancer, males / females	199.9	186.5	4.2	0.8	161

*Per 100 000 population (15+); **alcohol-attributable deaths, both sexes.

Years of life lost (YLL) score*, 2016

LEAST < 1 **2** 3 4 5 > MOST

* Based on alcohol-attributable years of life lost.

Prevalence of alcohol use disorders and alcohol dependence (%), 2016*

	Alcohol use disorders**	Alcohol dependence
Males	8.8	5.1
Females	1.8	0.7
Both sexes	5.3	2.9
WHO Western Pacific Region	4.7	2.3

* 12-month prevalence estimates (15+); **including alcohol dependence and harmful use of alcohol.

Figure 1: Health consequences of alcohol consumption in Papua New Guinea (WHO. 2018)

Social concerns relating to alcohol excess

Alcohol is one of society's oldest and most widely used intoxicants, and is embedded into the fabric of religious, wartime, celebratory and social occasions worldwide. The second-hand harms of alcohol are far reaching however, damaging social relationships, decreasing societal productivity, and increasing the risk of domestic violence, aggressive behaviour, road traffic injuries, crime and victimisation.^{16,17} Children of adults who consume alcohol to excess are also at risk of violence, neglect, poor school attendance and grades, and the development of alcohol dependence later in life.¹⁷

Legal drinking of alcohol in Papua New Guinea began in 1962 with the repeal of the law on prohibition. As with the health implications of alcohol use in Papua New Guinea, there is a lack of literature regarding the socioeconomic and cultural impacts of alcohol on society since this time. A study focusing on prevention and management of problems relating to alcohol abuse through primary healthcare found that in the two decades since alcohol consumptions was legalised, a rather clear-cut national style of alcohol use had developed, and that if continued, points in a disturbing direction.¹⁸

The same author went on to undertake further studies assessing attitudes and problems relating to alcohol and drug abuse amongst university students and office workers in the National Capital District of Papua New Guinea, finding moderate substance abuse concerns.¹⁹ Further work on alcohol use amongst university students followed, finding similar results.^{20,21} Universities across Papua New

Guinea have since adopted a zero-tolerance policy towards alcohol, inciting protests and garnering recent media attention.²²

Without further work in this area, it is difficult to move forward with appropriate resource and policy planning to mitigate the negative effects of alcohol consumption on PNG society.

Combatting high-strength low-cost alcohol

In general, when alcohol is more affordable, more is consumed; and conversely, when alcohol becomes less affordable, less is consumed. Globally, alcohol is now 74% more affordable than it was in 1987 when compared with average household income.²³ Whilst alcohol is used broadly in society, it is those who drink well above the safe consumption guidelines that are of most concern. In the UK, consumers drinking above the low-risk guidelines account for 68% of total alcohol sales revenue, with the heaviest drinking 4% of the population accounting for almost one third of sales.²⁴

High-strength low-cost liquor has become a pervasive problem, with the market comprising of wine, spirit and malt based ready to drink (RTD) beverages, and high-strength premixes. The most common distribution channels for such beverages are supermarkets and hypermarkets, liquor specialist stores, duty free shops, and online retailers.²⁵

The World Health Organization recommends combatting this growing problem by raising the price of alcohol as one of its three 'best buy' policies: the most cost-effective, well-evidenced solutions to alcohol harm.²³ Raising the price consumers pay for alcohol will, on average across the population, reduce consumption and therefore reduce harm. Large scale studies show that for every 10% increase in the price of alcohol there is a 5% decrease in consumption.²⁶ As a result, many countries have adopted minimum unit pricing (MUP), to set a price per standard drink below which alcohol cannot be commercially sold.

The UK have recently brought in such laws, with Scottish Parliament passing the Alcohol (Minimum Pricing) (Scotland) Act 2012, and the Welsh Assembly passing the Public Health (Minimum Price for Alcohol) (Wales) Act 2018.²⁷ Both countries have set an MUP of 50p, meaning a pint of regular strength beer or cider cannot be sold for less than £1 (PGK 4.7), and a bottle of wine for £5 (PGK 23.5). As of January 2022, the Republic of Ireland also introduced an MUP of 10 cents per gram of alcohol, equating to 67p (PGK 3.15) per unit.²⁷ The benefit of adopting an MUP model is that it specifically targets high-strength low-cost beverages responsible for the greatest societal damage, with no impact on the price of drinks that are already sold for more than the MUP, including almost all alcoholic beverages sold in pubs, clubs and restaurants.

Recently adopted MUP policies are being thoroughly evaluated across Europe, to assess not only their effectiveness in reducing alcohol harm, but also the wide-ranging impacts of the policies across society, from the effects on the alcohol industry to effects on vulnerable groups such as children and the homeless.²⁸

This is important work which Papua New Guinean policy makers should follow closely and aim to adopt in order to manage the growing epidemic of high-strength low-cost alcohol we are currently faced with.

Positive impacts of robust policy

Papua New Guinea currently struggles from a lack of clear policies and legislative frameworks addressing the production, labelling, sale and consumption of alcohol, as well as a lack of industry regulation and enforcement where policies do exist.

The WHO Global Status Report on Alcohol and Health 2018 uses the below framework (see figure 2) to compare nation's alcohol-related policies and interventions.¹³ Whilst the lack of alcohol related policies and /or the ability to report on them is an issue common to many nations within the Western Pacific Region, as the largest country within the Region, Papua New Guinea should be aiming to act as a leader in this space.

POLICIES AND INTERVENTIONS

Written national policy (adopted/ revised) / National action plan	— / —	National maximum legal blood alcohol concentration (BAC) when driving a vehicle (general / young / professional), in %	— / — / —
Excise tax on beer / wine / spirits	— / — / —	Legally binding regulations on alcohol advertising / product placement (any)	— / —
National legal minimum age for off-premise sales of alcoholic beverages (beer / wine / spirits)	— / — / —	Legally binding regulations on alcohol sponsorship / sales promotion (any)	— / —
National legal minimum age for on-premise sales of alcoholic beverages (beer / wine / spirits)	— / — / —	Legally required health warning labels on alcohol advertisements / containers (any)	— / —
Restrictions for on-/off-premise sales of alcoholic beverages (any):		National government support for community action (any)	—
Hours, days / places, density	—, — / —, —	National monitoring system(s) (any)	—
Specific events / intoxicated persons / petrol stations	—, — / —, —		

Figure 2: Papua New Guinean national policies and interventions regulating alcohol, in line with international standards (WHO. 2018)

The WHO Global Strategy to Reduce the Harmful Use of Alcohol has been designed to promote and support local, regional and global actions to prevent and reduce the harmful use of alcohol and their ensuing social consequences.²⁹ The Strategy focuses on 10 key areas of policy options and interventions to be addressed at the national level. The ten areas for national action are:

1. Leadership, awareness and commitment.
2. Health services' response.
3. Community action.
4. Drink-driving policies and countermeasures.
5. Availability of alcohol.
6. Marketing of alcoholic beverages.
7. Pricing policies.
8. Reducing the negative consequences of drinking and alcohol intoxication.
9. Reducing the public health impact of illicit alcohol and informally produced alcohol.
10. Monitoring and surveillance.

This framework provides an ideal starting point for policy makers in Papua New Guinea and can be tailored to the country's specific needs. The development of such an action plan is the most important first step towards tackling issues around alcohol consumption and related violence. A strong national action plan allows countries to clearly identify and define the scope of alcohol related issues and develop realistic and attainable strategies and goals to address these issues over a defined period. The aim of a national alcohol strategy should be to prevent and minimise alcohol related harms among individuals, families and communities by identifying agreed national priority areas of focus and policy options, promoting and facilitating collaboration, partnership and commitment from government and non-government sectors, and targeting a specified reduction in harmful alcohol consumption.⁸ The below infographic is helpful in outlining these aims.

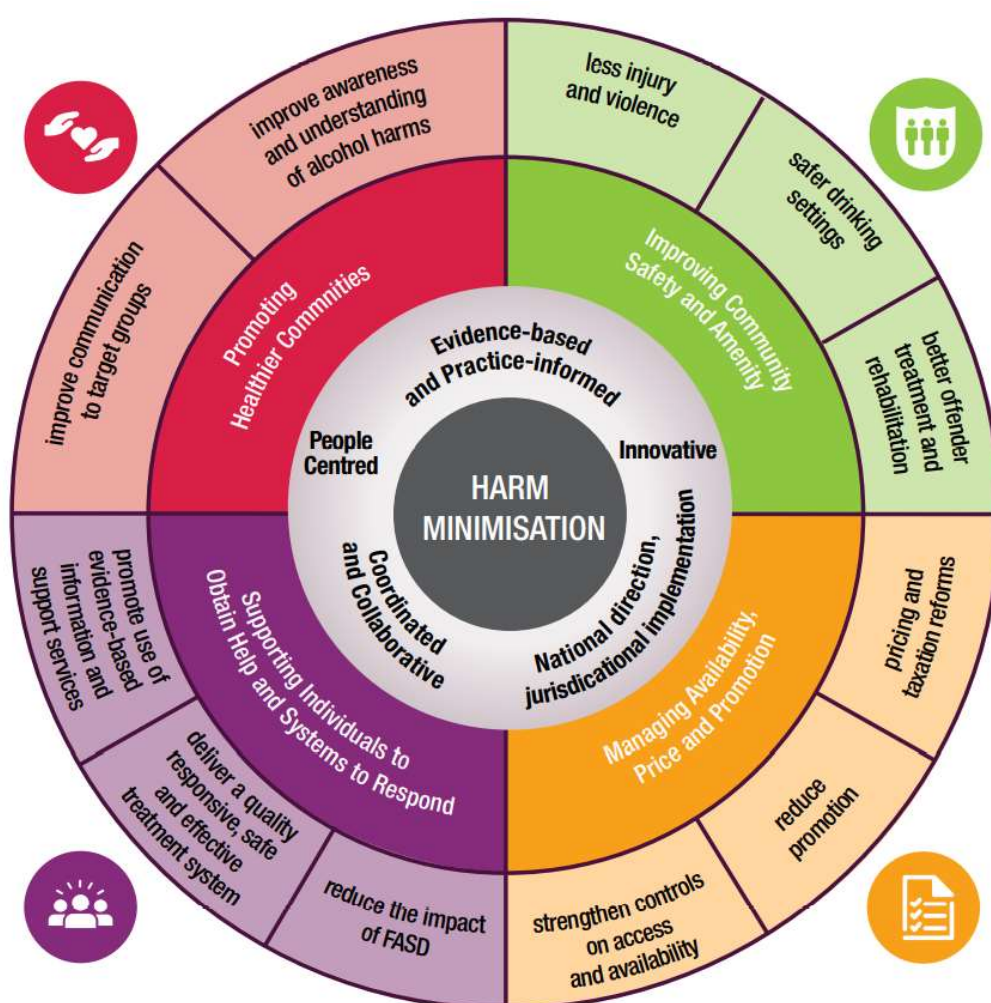


Figure 3: Aims of a successful National Alcohol Strategy (Australian Department of Health. 2019)

Along with a strong national action plan, there is significant evidence for the positive impacts of alcohol taxation, not only in its potential to curb alcohol related health and social risks, but also for its support in meeting Sustainable Development Goals and for significantly contributing to financing health and development.³⁰ The below infographic outlines the positive effects that alcohol taxation can have on public health, and how these align with the Sustainable Development Goals.

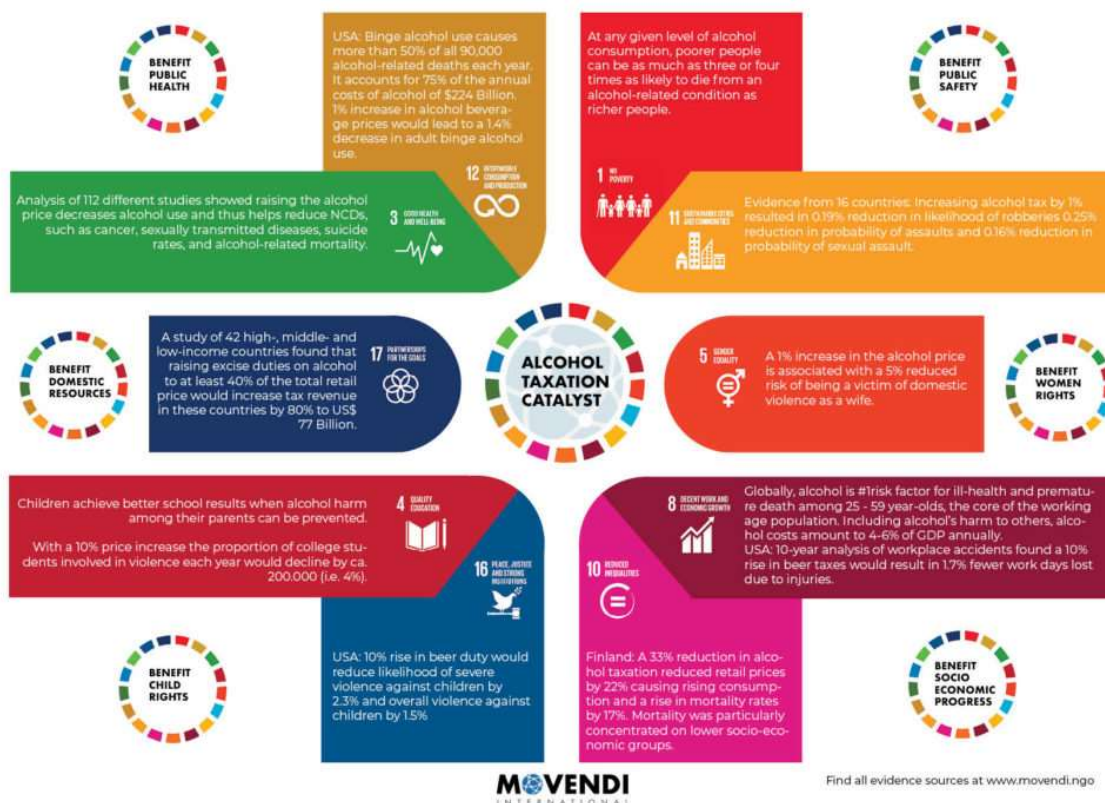


Figure 4: Benefits of alcohol taxation (Movendi International. 2021)

There is an argument for the ineffectiveness of banning commercial alcohol sale in an attempt to reduce the societal risks associated with excessive alcohol consumption. Whilst it means commercially produced alcohol is not readily available for sale, total alcohol bans are not a long-term solution. Banning alcohol pushes the alcohol market underground, increasing illegal homebrew, moonshine or in the case of PNG, 'jungle juice' production. This makes it much more difficult to effectively police alcohol sale and consumption, as well as increasing the proportion of high-strength or dangerous forms of alcohol being consumed. Alcohol companies also provide employment, contribute to the economy, and as outline above, taxation on alcohol goes a long way towards funding public health initiatives to combat alcohol's detrimental effects. Making the alcohol industry safe and sustainable, with appropriate regulation and enforcement is therefore paramount.

The St John experience

St John have experienced an escalating number of cases relating to alcohol fuelled violence, injuries whilst intoxicated, and other direct health effects of excessive alcohol consumption in recent years. The increase in alcohol fuelled violence across the country is an alarming trend, and one which directly impacts St John operations.

Both trauma and violence related cases are on the rise. Across the 5 provinces within which St John operates, 2529 trauma cases were attended in 2021, up from 1887 in 2019. Likewise, a rise in violence related cases was seen, with 1189 cases attended in 2021, up from 1079 in 2019. These numbers have escalated recently, with St John responding to 215 cases involving violence in November 2021 and a further 247 cases involving violence in December. Whilst the majority of patients do not have a blood alcohol concentration (BAC) taken, anecdotal evidence suggests approximately 75% of trauma and violence related cases include an alcohol component.

Sporting and political events as well as holiday celebrations all prove high risk for alcohol fuelled violence related presentations to both St John and Port Moresby General Hospital (PMGH), the country's tertiary referral service. St John attended to 36 cases during the 2022 New Year's Eve celebrations, 84% of which were trauma related, caused almost exclusively by alcohol fuelled violence including multiple stabbings, one of which was fatal.³¹ Similar numbers were seen at PMGH over the festive period, with 32 trauma presentations to the emergency department (ED) over Christmas, 88% of which were alcohol related. New Year's attracted 38 trauma related ED presentations, all of which were alcohol related.

St John have also been victim of direct alcohol fuelled attacks on ambulance crews, with a recent attack on an ambulance in Kundiawa, Chimbu Province breaking windows and damaging the vehicle.³² This attack resulted in a suspension of ambulance services in the region for a week whilst the vehicle was being repaired.

Recommendations

St John's primary concern in relation to alcohol use and associated violence is around safeguarding the health and wellbeing of the people of Papua New Guinea. In light of the above issues and evidence, we put forward several recommendations to the Special Parliamentary Committee on Alcohol-Related Violence:

1. Development of a National Alcohol Strategy in line with the WHO Global Strategy to Reduce the Harmful Use of Alcohol framework.
2. Implementation of minimum unit pricing for alcoholic beverages to stem the rise of high-strength low-cost alcohol.
3. Development of education programs surrounding safe alcohol consumption behaviours, with such programs embedded into school curriculum.
4. Ensure reliable and accountable enforcement of alcohol related policies and legislation, especially targeting legal BAC limits whilst operating motor vehicles.
5. Raise taxation on alcohol and ensure transparent use of these funds to support alcohol – related public health measures.

References

1. The National Research Institute Papua New Guinea discussion paper No. 121. Michael Unage. Addressing alcohol abuse in Papua New Guinea. 2011. Available from: https://pngnri.org/images/Publications/DP121_AddressAlcoholAbuse_MUnage.pdf
2. Papua New Guinea Joint Task Force National Control Centre for COVID-19. Controller Manning issues new control measures. June 11 2021. Available from: <https://covid19.info.gov.pg/controller-manning-issues-new-control-measures/>
3. The National. Georgina Korei. Provinces to ban alcohol. February 4 2022. Available from: <https://www.thenational.com.pg/provinces-to-ban-alcohol/#:~:text=THE%20sale%20and%20consumption%20of%20alcohol%20will%20be,border%20command%20to%20help%20ensure%20a%20peaceful%20election.>
4. Fortuna PNG. Pre mix strong. Available from: <https://www.fortunapg.com/catalogsearch/result/?q=Pre+mix+strong>
5. Papua New Guinea Post-Courier. Marjorie Finkeo. Tests Reveal Excessive Alcohol Levels. February 3 2022. Available from: <https://postcourier.com.pg/tests-reveal-excessive-alcohol-levels/>
6. Pacific Islands Legal Information Institute. Liquor (Licensing) Act. 1963. Available from: http://www.pacii.org/pg/legis/consol_act/la1963190/#:~:text=INDEPENDENT%20STATE%20OF%20PAPUA%20NEW%20GUINEA.%20AN%20ACT,fermented%20and%20spirituous%20liquor%2C%20and%20for%20related%20purposes.
7. Papua New Guinea Post-Courier. Parliamentary committee announces ToR. February 4 2022. Available from: <https://postcourier.com.pg/parliamentary-committee-announces-tor/>
8. Commonwealth of Australia as represented by the Department of Health. National Alcohol Strategy 2019 – 2028. Australian Department of Health. 2019. Available from: <https://www.health.gov.au/sites/default/files/documents/2019/12/national-alcohol-strategy-2019-2028.pdf>
9. Papua New Guinea Post-Courier. St John wary of increase in alcohol related violence cases. Patrick Niato Tom. July 15 2019. Available from: <https://postcourier.com.pg/st-john-wary-increase-alcohol-related-violence-cases/>
10. ABC Pacific Beat. PNG's St John ambulance sees spike in alcohol fuelled violence over festive season. Mala Darmadi. January 11 2022. Available from: <https://www.abc.net.au/radio-australia/programs/pacificbeat/png-alcohol-abuse/13701676>
11. Papua New Guinea Post-Courier. Hospitals record one death, 37 injuries on New Years Eve. Theophiles Singh. January 3 2022. Available from: <https://postcourier.com.pg/hospital-records-one-death-37-injuries-on-new-years-eve/>

12. St John Papua New Guinea. Community Outreach. Last updated 2021. Available from: <https://stjohn.org.pg/community/>
13. World Health Organization. Global status report on alcohol and health 2018. WHO. Geneva. 2018. Available from: <https://www.who.int/publications/i/item/9789241565639#:~:text=Global%20status%20report%20on%20alcohol%20and%20health%202018.,three%20quarters%20of%20these%20deaths%20were%20among%20men.>
14. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019) Reference Life Table. Seattle, United States of America: Institute for Health Metrics and Evaluation (IHME), 2021.
15. Marshall M. Alcohol Consumption as a Public Health Problem in Papua New Guinea. *Int J of Add.* 1988;23(6):573-589. doi: 10.3109/10826088809039220
16. Moss HB. The impact of alcohol on society: a brief overview. *Soc Work Public Health.* 2013;28(3-4):175-7. doi: 10.1080/19371918.2013.758987. PMID: 23731412.
17. IOGT-NTO & Swedish Society of Medicine. Alcohol and Society. Stockholm. 2015. Available from: [Alcohol an https://movendi.ngo/wp-content/uploads/2015/03/Alcohol_and_society2015_en.pdf](https://movendi.ngo/wp-content/uploads/2015/03/Alcohol_and_society2015_en.pdf) [society2015_en.pdf](https://movendi.ngo/wp-content/uploads/2015/03/Alcohol_and_society2015_en.pdf) (movendi.ngo)
18. Johnson FY. Prevention and management of problems related to alcohol abuse in Papua New Guinea through primary health care. *Med Law.* 1989;8(2):175-89. PMID: 2516596.
19. Johnson FY. An epidemiological survey of alcohol and drug abuse in the national capital district of Papua New Guinea. *Med Law.* 1990;9(2):797-830. PMID: 2122155.
20. Johnson FY. A study of substance abuse on two campuses of University of Papua New Guinea. *Med Law.* 1998;17(2):229-41. PMID: 9757738.
21. Tekopiri Yakam L. Factors associated with alcohol consumption among students in Divine Word University, Madang Province, Papua New Guinea. *Contemporary PNG Studies: DWU Research J.* 2021;34:17-27
22. ABC Pacific Beat. Call for review of alcohol ban at PNG universities. Marian Faa. October 1 2021. Available from: <https://www.abc.net.au/radio-australia/programs/pacificbeat/png-university-alcohol/13566414>
23. World Health Organization. Tackling NCDs: “best buys” and other recommended interventions for the prevention and control of noncommunicable diseases. WHO. Geneva. 2017.
24. Bhattacharya A, Angus C, Pryce R, Holmes J, Brennan A, Meier PS. How dependent is the alcohol industry on heavy drinking in England?. *Addiction.* 2018;(113):2225–2232. <https://doi.org/10.1111/add.14386>.

25. Alcoholic Ready-To-Drinks & High-strength Premixes Market Size Estimation, in-Depth Insights, Historical Data, Price Trend, and Competitive Market Share & Forecast 2020 – 2028. 2020. Available from: <https://www.datainsightspartner.com/report/alcoholic-ready-to-drinks-high-strength-premixes-market/369>
26. Wagenaar A, Salois M, Komro K. Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction*. 2009;104(2):179–90.
27. Alcohol Change. Alcohol price and duty. 2022. Available from: <https://alcoholchange.org.uk/policy/policy-insights/alcohol-price-and-duty>
28. Buhociu M, Holloway K, May T, Livingston W, Perkins A. Assessing the Impact of Minimum Pricing for Alcohol on the Wider Population of Drinkers – Baseline. 2021. Available from: https://gov.wales/sites/default/files/statistics-and-research/2021-07/assessing-the-impact-of-minimum-pricing-for-alcohol-on-the-wider-population-of-drinkers-baseline_0.pdf
29. World Health Organization. The WHO global strategy to reduce the harmful use of alcohol. WHO. Geneva. 2018. Available from: https://www.who.int/substance_abuse/msbalcstrategy.pdf#:~:text=The%20global%20strategy%20to%20reduce%20the%20harmful%20use,Health%20Organization%20to%20sustaine d%20action%20at%20all%20levels.
30. Movendi International. Alcohol policy best buys. Movendi International. Stockholm. Last updated 2021. Available from: [Alcohol Policy Best Buys - Movendi International](#)
31. PNG Haus Bung. St John supports call to review all cheap high-strength liquor. Christine Kildi. January 5 2022. Available from: <https://pnghausbung.com/st-john-suspend-services-in-kundiawa-following-attack-on-ambulance/>
32. PNG Haus Bung. St John suspend services in Kundiawa following attack on ambulance. Christine Kildi. January 10 2022. Available from: <https://pnghausbung.com/st-john-suspend-services-in-kundiawa-following-attack-on-ambulance/>