Curbing the tide – Non-communicable disease in the Pacific

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Abstract
This paper assesses the introduction of several small-scale sentinel data surveillance approaches. These data assist with improving the understanding of casual factors related to the development of NCDs at the local level in the Pacific and the design of subsequent interventions. While individually the data may be of limited value due to methodological considerations, their conjoint use provides a reasonably strong database upon which to base interventions. Within the highly resource constrained environment of the Pacific, such approaches are feasible and practical, while also ensuring that local data to develop local solutions, are available to inform evidence based decision making. (PHD, 2005 Vol 12 No 2 Pages 61 - 64)

Introduction

It is well documented that Pacific Island Countries and Territories (PICTs) are currently in the grip of significant demographic and epidemiological changes, with an increase in the proportion of older people, high rates of communicable diseases (e.g. malaria and tuberculosis) and increasing problems associated with non-communicable diseases (NCDs) (e.g. cardiovascular disease, cancer, diabetes, chronic respiratory conditions and injuries). Indeed, it is estimated that by 2020, NCDs will be responsible for over 70% of the global burden of disease.[1]

The Pacific Action for Health Program (PAHP) aims to contribute to the reduction of NCDs in the Pacific Islands. In the initial phase, the participating countries are Kiribati, Tonga and Vanuatu. The program is funded by the Australian Agency for International Development (AusAID) and managed by the Secretariat of the Pacific Community (SPC).

The specific purpose of the program is to work in conjunction with the respective Ministry of Health (MOH) and relevant NGOs, to enhance in-country capacity to address priority NCD risk factors and develop health-promoting environments for young people aged 10-19 years. One major component of the PAHP has been to conduct directed research to define and illustrate the nature and size of problems related to NCDs in respect to tobacco and alcohol misuse. These data have been used to formulate and implement supportive health policies in addition to relevant community based activities to promote healthy behaviours. This paper reports on the collection and utilisation of these data, plus identifies additional data collection approaches that may be useful for Pacific countries working in a resource-limited environment.

Management

For each participating country, consultation with the respective MOH has led to the identification of one specific risk factor to serve as an entry point on which to base the NCD program. In Kiribati and Vanuatu, this risk factor is alcohol consumption. For Tonga, the designated issue is tobacco use.

A Multi Sectoral Working Group (MSWG) in each country, chaired by a senior MOH official, oversees the in-country program. Additionally, there is a strong emphasis on partnerships between government agencies, NGOs and community-based organisations to enact the interventions.

While there are large scale NCD data collection efforts underway in the Pacific, these are generally costly in terms of both human and financial resources, plus require significant investments of time for completion.[2] Central to the development of the PAHP work plans and

proposed actions has been the collection and collation of small-scale sentinel local data assessments to enhance advocacy efforts and drive implementation. These data have included policy reviews, economic data, spatial analysis assessing the density of tobacco and alcohol outlets using a Geographical Information System (GIS), compliance assessments for under-age purchase of tobacco and alcohol, and emergency department hospital data.

Policy Reviews

Enhancing policies and their enforcement have been central to the overall program. A major contributor has been the demarcation of quarantined funding to ensure that policy work could be undertaken. Policy reviews examining alcohol related issues in Kiribati and Vanuatu incorporated assessments of existing legislation and sources of alcohol related harm. The reviews were greatly assisted by members of the MSWG's and their linkages with other sectors such as finance, customs, police and legal departments. Following these reviews, alcohol policy committees have been established to commence updates on legislation, extend enforcement (under-age purchase and breath testing) and prosecution procedures.

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For Tonga, an amendment to the Tobacco Act of 2000 has given dedicated officers such as health inspectors and district officers, the authority to enforce the age of purchase regulations.[3] Training in enforcement procedures for health inspectors and district officers has been completed, with a dedicated Environmental Health Officer position to enforce the Act being established. This is a significant step forward as previously only police were designated with this role but there had never been a prosecution despite sales to minors being common practice. In addition, recent progress has been made on further amendments to the Tobacco Act to ensure its compliance with the Framework Convention on Tobacco Control (FCTC) banning the sale of single sticks of tobacco.[4] This work has been a collaborative effort with an NZAID program and was passed by parliament in the 2004 sitting.[5]

Economics

From a financial perspective the impact of NCDs on these countries has been studied on only a limited basis, indeed for Kiribati and Vanuatu, no previous assessment of the impact of NCDs had been undertaken.[6] Currently, NCDs place a disproportionate burden on hospital expenditures; 8.1% of hospital admissions in Kiribati utilise 11.8% of the total hospital budget; 10.4% of Tongan admissions account for 19.6% of the budget; and, 5.8% of admissions in Vanuatu use 9% of the budget. It is projected that the proportional costs will continue to escalate, with recognition that these figures are in fact significant underestimates as they do not account for social and medical costs outside of hospital admissions.[7] These data have proved extremely useful in placing NCDs on the agenda of key decision makers both within and external to government. In particular, they have been useful in engaging other sectors to 'buy-in' to NCD prevention through the development of the national NCD Prevention and Control strategic plans.

Tobacco and alcohol availability

It is well established that easy access to tobacco and alcohol increases consumption.[4,8] One important component of access is outlet density (availability). Using a Geographical Information System developed by the Demography Section of SPC, all tobacco and alcohol outlets were mapped in the major centre of the three countries through use of a hand held Global Positioning Satellite (GPS) unit. The results indicated that Kiribati (South Tarawa) had 96 alcohol and 245 tobacco outlets; Tonga (Nuku'alofa) 84 alcohol and 254 tobacco outlets; and, Vanuatu (Port Vila) 89 alcohol and 393 tobacco outlets. As licenses for the sale of alcohol are required in these countries, it has been possible to cross-reference the outlet density. These data illustrate the staggering extent of tobacco availability in the respective countries. Such quantified information is a strong lever in seeking to reduce current availability of these products and can also be used to lobby for restrictions on the sale of tobacco and alcohol around critical areas e.g. schools or villages.

Compliance Assessments

To assess the capacity of under-age patrons to purchase alcohol and tobacco, a series of controlled compliance assessments were undertaken in Kiribati and Tonga. Young people ranging in age from 11 to 16 years (median 14 years) were trained in entering premises and asking for alcohol and/or tobacco. The young people were asked to purchase a single stick of tobacco (illegal in Tonga) and a can of beer. To ensure safety, the attempted purchases by under-age young people took place with adult supervision, but not close enough to confound the purchase. Individuals were instructed not to lie about their age if questioned, nor to object should the vendor refuse to sell the product. In Kiribati 78 premises were visited with all but two selling tobacco (one only sold cigarettes in full packets & the other was a hotel that barred entrance), a 97% successful purchase rate. For alcohol, 29 premises did not hold a license and therefore did not sell, 11 were out of stock but would have sold if available, and 38 successful attempts were made – there was only one rejection

(from the hotel listed above). Assuming the 11 premises out of stock would have concluded the sale, as there was no indication to suggest otherwise, this represents successful purchases from licensed premises on 98% of occasions. In Tonga, 141 premises were assessed for selling both tobacco and alcohol. For tobacco, 21 premises failed to sell (success rate of 85%) and for alcohol 24 premises would not sell. Significantly, with the exception of three that refused alcohol sales, these premises that upheld the law did not stock tobacco or alcohol due to religious affiliations with either the Seventh-day Adventist or Mormon Churches. Therefore, if these premises are excluded, the successful under-age purchase rate for tobacco is 100% and 98% for alcohol. Such information illustrates the importance of incorporating interventions that address both supply (sellers) and demand (purchasers). Further, it highlights the current lack of effective legislative enforcement, despite the purchase and use of these products (particularly alcohol), being widely disapproved of in Pacific cultures.

Hospital data

Within the Pacific there is currently limited quantitative data on the contribution of alcohol to morbidity. In an effort to identify markers on the contribution of alcohol (and kava), short-term sentinel studies have been conducted through the Emergency Departments (EDs) of the central hospitals in Kiribati and Vanuatu. Using hand held breath analysers (and questioning regarding kava intake as rapid tests are unavailable); assessment of patients attending the EDs, were undertaken between the hours of 7pm-7am. In both countries the assessment coincided with Independence Week celebrations (Mon-Sun: seven days) plus for Vanuatu, a further six days consisting of measurements on Friday and Saturday nights for three consecutive weeks, a total of 13 days. As only a small number of alcohol related cases presented Kiribati (9) and Vanuatu (29), interpretation of the data needs to be handled cautiously. However, the findings suggest high levels of intoxication. In Kiribati, the average Breath Alcohol Concentration recorded was 0.206, with all but one patient (motorcycle injury) presenting as a result of violence. Overall, alcohol was implicated in 13% of presentations. In Vanuatu, the average Breath Alcohol Concentration recorded was 0.10, however adding complexity to this is the self-reported intake by 15 of the patients that had also consumed kava (mean n=6 shells). Causal factors for presentation included assault (12), non-violence related injuries (8), intoxication-related illness (7), one rape and an attempted suicide. As denominator data on presentations over this period could not be accurately defined, the proportion of alcohol-related cases could not be determined.

Perceived barriers to data collection

While it is evident that data collection, surveillance and monitoring capacity require strengthening in many PICTs, a relatively common perception is that such processes are complex and costly. Given the human and financial resource limitations that most PICTs face, it is essential that low-cost sentinel assessment can be undertaken to inform interventions. The examples provided in this paper have drawn on development partner funds, however it is possible to replicate similar data collection approaches that provide some leverage within the existing limits of most current systems.

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1. *Policy reviews* can be undertaken by comparing known sources of best practice e.g. the FCTC for tobacco and/or data from other reputable sources for alcohol (Alcohol: no ordinary commodity).[7] This can be done in-country by local practitioners assessing what is happening against the defined best practice. While relatively few best practice principles have been rigorously tested in the Pacific, there has been considerable international assessment in countries at varying stages of development, indicating the generalisability of these principles. Such fundamental steps will provide useful data upon which to identify gaps and develop interventions that suit the national context.

2. *Economic studies* based on assessments of hospital bed-days measured against the designated International Classification of Disease (ICD) codes that are used universally in the Pacific, can provide useful information from which to build inferences regarding the costs of NCDs.

3. For measures of *outlet density* (product availability), many countries already possess GPS units (usually within Lands Departments or equivalent), that could be "borrowed" for such purposes. Even if GPS units are not available within a country, useful information can be provided by monitoring the number of sites selling tobacco and alcohol in a given area, even without location mapping of the data.

4. *Compliance surveys* are very cost efficient and if repeated over time, effective in reducing sales to under-

age purchases. Such surveys can be easily undertaken within the financial and human resource limits countries face, as they require only enough funds to purchase the product and a small payment to the youth participating.

5. *Emergency data* relating to the contribution of alcohol to morbidity could be fostered by building alliances with local police departments and "borrowing" existing hand held breath analysis units on a short-term basis to conduct sentinel surveys. In many PICTs anecdotal reports from police suggest that alcohol is the main causal factor increasing their workloads. Thus attempts to reduce this problem are likely to be met with enthusiasm. An alternative information source is the HIS system data that incorporate a field on the potential involvement of alcohol for presenting patients. A review of these data can add valuable detail.

Application of data

While individually each of these data sources provides only a small snapshot, collectively they have been invaluable in assisting with the development of broadly based NCD strategies in each country. Although each country has previously had ad-hoc plans of action to address NCDs, these have been located almost exclusively within the MOH, with little to no input from external sectors. Importantly, these strategies will address the risk factors that lead to the development of NCDs and are based around best practice evidence in the area of preventive health. As the solutions to these issues frequently lie outside the mandate of health, external sectors have for the first time in the Pacific, committed to a considerable input to the implementation of the strategies.

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Conclusion

This project has demonstrated that a range of data sources can be drawn on at relatively low cost to provide a sound basis for the development and implementation of interventions. Too often the collection and collation of data is viewed as an onerous task requiring rigorous methodological protocols. While small-scale sentinel collections such as that outlined in this paper will not replace rigorous studies, there is increasing recognition that such approaches have a place in answering questions regarding the appropriateness and feasibility of interventions by providing evidence about settings and contexts, particularly in developing countries.[9] Continuing development of data sources to address key casual factors is an important consideration for PICTs, as they seek to introduce new evidence-based approaches to reduce the burden of NCDs. The approaches outlined in this paper, illustrate some methods to facilitate the collection, collation and utilisation of such data.

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