SCIENTIFIC FEDERATION
ABODE FOR RESEARCHERS

Tahir Turk, SF J AIDS HIV Res, 2017, 1:1

SciFed Journal of AIDS & HIV Research

Research Article Open Access

An Integrated Approach to Strategic Communication and Condom Social Marketing to Address the HIV/AIDS Epidemic in Papua New Guinea

*[1]Tahir Turk, [2]Clement Malau and [3]Andrew Rose

*[1]Communication Partners International, 24 Dulwich Road, Springfield, NSW 2250, Australia

*[2]University of Papua New Guinea, Port Moresby, Papua New Guinea

*[3]Anglo-Pacific Research, Port Moresby, Papua New Guinea

Abstract

Issues addressed

An integrated strategic approach to health communication program planning, implementation and evaluation is critical in addressing global pandemic threats such as HIV/AIDS. This was particularly the case in Papua New Guinea (PNG) at the start of the new millennium, where a mid-level HIV/AIDS epidemic was imminent, given risk behaviours indicative of those identified in African countries. A population level, behaviour change communication strategy, integrating condom social marketing approaches, was seen as having the potential to address the cultural and other risk behaviours leading to a rapid rise in HIV cases presenting in PNG hospitals and clinics. The strategic integrated approach, not evident in other HIV/AIDS programs at the time, was premised on an adequately funded, five-year, HIV/AIDS prevention and care program, to stem the rise of HIV in the country.

Methods

A four-stage, strategic planning cycle was utilised to operationalise the communication strategy and condom social marketing, with the first stage encompassing a needs assessment with stakeholders and program beneficiaries to more than 220 participants in 17 provinces of PNG. The elicitation research encompassed qualitative fieldwork approaches, including semi-structured interviews and focus group discussions to inform the development of a national strategy. Following endorsement of the strategy, the second stage involved development of evidence based, best practice approaches to message design and dissemination. The implementation stage involved the rollout of multilevel, integrated mass media campaigns to support community based interventions at a scale not previously implemented in PNG. A monitoring and evaluation framework incorporating formative, and evaluative research monitored key performance indicators following each campaign phase to identify achievements, areas of further development and lessons learned. Annual outcome evaluations, used national, cross-sectional surveys of 2000 respondents and standardised performance indicators to provide snapshots of program achievements and opportunities for continuous improvement. The approaches facilitated the implementation and continuous improvement of four national campaigns in PNG from 2000-2005.

Results

Barriers and benefits analysis during the needs assessment identified a range of cultural, gender based and socioeconomic factors which increased risk to HIV infection in PNG. As well as alcohol abuse, sexual violence and cultural practices of scarification, high levels of stigma prevailed, driving infected patients underground and further fuelling infection. Subsequent interventions featured strong and consistent program branding, coupled with synergised campaign messages to build risk perceptions, address stigma and promote preventative behaviours address at national and community level. High frequency and dissemination of messages at national, provincial and community levels achieved high recall of interventions at population level and significant improvements in knowledge about HIV risks, risk and self-efficacy perceptions, and risk reduction behaviours across the term of the strategy.

Conclusions

Secure and adequate donor funding across the five-year project, allowed for strategic planning with the establishment of realistic and achievable goals and objectives articulated through an integrated communication strategy. The process built ownership and engagement by stakeholders and continuous improvement at each phase of strategy evolution. Despite encouraging findings a number of challenges remain with evidence of an early maturation effect to strategy campaigns requiring innovative and creative messaging approaches to maintain audience engagement.

So what? It was likely that behaviour change and integrated condom social marketing approaches flattened the rapidly rising curve of HIV infection and averted a mid-level AIDS epidemic in PNG. As such, strategic, integrated, evidence based communication programs should be scaled up in the Pacific to address emerging pandemic threats, including communicable and non-communicable disease prevention.

KeyWords

HIV/AIDS; Social Marketing; Behaviour Change Communication; Health Behaviors; Health Communication Strategy

Introduction

There were approximately 36.7 million people worldwide living with HIV/AIDS at the end of 2015. Of these, 1.8 million were children (<15 years old). Although, there are also an estimated 201,000 children living with HIV in the Asia Pacific region, new notifications among children have declined by 27% since 2000. However, at the beginning of the new millennium, HIV/AIDS in the Melanesian Islands of Papua New Guinea (PNG), was emerging as a major health threat with the country found to have the largest HIV epidemic in the Pacific. The cumulative number of HIV cases reported in 1999, reached 2,342 infections, including 772 AIDS cases and 158 deaths due to AIDS. High levels of other sexually transmissible infections (STIs) were also reported in sex workers in PNG with more than one million new cases of STIs occurring annually. If left unchecked, HIV had the potential to expand rapidly across PNG also spreading the epidemic across the island bridge to the Australian mainland, and other Pacific island nations.

In September 1995, the Government of Papua New Guinea (GoPNG) with the support of the Australian AID Agency (AusAID) commenced a Sexual Health and HIV/AIDS Prevention and Care Project. The Project components included the provision of support for the strengthening of community based HIV/AIDS prevention and care programs, a targeted peer intervention program among high risk behaviour groups, and support for sexual health promotion activities. In June 1997, the Mid Term Review recommended that the project be expanded to a national response to the rapidly escalating HIV/AIDS epidemic. The PNG National HIV/AIDS Support Project (NHASP) commenced in PNG in October 2000.3 The Project was designed to support the PNG National AIDS Council Secretariat in the coordination and monitoring of the implementation of the national HIV/AIDS Medium Term Plan and included provision for supporting the National AIDS Council (NAC) in consolidating the establishment of Provincial AIDS Committees in 20 Provinces in PNG. One of the components of NHASP was a communication program to raise awareness of HIV/AIDS.

Strategic communication approaches have been found to be effective methods for dealing with emerging pandemic threats. The National HIV/AIDS behaviour change and social marketing campaigns for NHASP was seen as an important component of the overall strategy, designed to raise awareness of HIV/AIDS, build risk perceptions, and increase knowledge and motivation by target groups to engage in risk reduction activities. A social marketing strategy, incorporating behaviour change communication had the potential to address cultural, social and other risk factors leading to the rapid rise in HIV cases presenting in hospitals and clinics in PNG. The strategic approach was premised on a fully funded, five-year communication strategy integrated with other prevention and care initiatives, designed to stem the rise of HIV in the country.

Although, there is evidence on the efficacy of communication programs, to address pandemic threats such as HIV/AIDS, , , the evidence on the use of longer term, population level, strategic communication approaches to tackle impending epidemic threats, is scarce. The purpose of this case-study is to examine factors which may contribute to successes in addressing challenges such as HIV/AIDS in the Pacific and other LMICs, through strategic, long term, evidence based approaches to communication program roll-out and continuous improvement.

Methods

Given the Five-year term of the GoPNG National HIV/AIDS support and prevention (NHASP) project and the importance of institutionalising evidenced based approaches to behaviour change communication not previously implemented in PNG, a four-stage, strategic planning cycle, was adopted to operationalise national communication campaigns for the five-year term of

***Corresponding author:** Tahir Turk, Communication Partners International, 24 Dulwich Road, Springfield, NSW 2250, Australia. E-mail: tturk@cpimail.net

Received Jul 6, 2017; **Accepted** Jul 12, 2017; **Published** Jul 26, 2017

Citation: Tahir Turk (2017) An Integrated Approach to Strategic Communication and Condom Social Marketing to Address the HIV/AIDS Epidemic in Papua New Guinea. SF J AIDS HIV Res 1:1.

the strategy. The annual campaign "phases" allowed programmers time to adequately plan for the communication campaigns, develop and pre-test messages, materials and activities, implement media plans, disseminate resource materials, and coordinate a raft of synergised advocacy activities. The final stage of the annual planning cycle involved an outcome evaluation of the strategy phase, with findings and lessons learned used to continuously improve on the planning and implementation of the next phase of the strategy. This methodological approach facilitated the implementation of four national communication campaigns and five national evaluations (including a baseline survey) from 2000-2005.

More specifically, the initial "Planning stage" of the strategy, involved compiling of a literature review and conducting formative research and a needs assessment with key stakeholders and program beneficiaries around the country. The second stage "Development" involved developing the creative strategy, including design and pre-testing of key messages and a range of campaign and socially marketed condom brands. Stage-three "Implementation" involved coordination of a synergised, multilevel platform of communication activities utilising population level, paid and earned media approaches, with additional community media resources supporting community activities and interpersonal communication (IPC). Stage-four "Evaluation" involved the development of a monitoring and evaluation (M&E) framework for the five-year term of the strategy, including standardised key performance indicators (KPIs) linked to annual outcome evaluations which utilised national cross sectional, knowledge, attitudes and practices (KAP) surveys of 2000 respondents across all four regions of the country. Five campaign evaluations were conducted over the course of the strategy (including a baseline survey commenced prior to the campaigns commencement) using the core set of KPIs focusing on KAP determinants. Other KPIs were integrated as the strategy evolved and transitioned into a second stream of condom social marketing activities in years 3-5 of the strategy roll-out. A more detailed outline of the four-stage strategic communication planning cycle activities is provided as follows.

Planning Stage

Given the urgency to develop and scale-up a communication strategy to raise awareness of the risks of HIV/AIDS, a rapid assessment and response (RAR) method was embarked upon, involving consultations with stakeholders and program beneficiaries. , The elicitation approach, which encompassed consultations in 17 of the 21 provinces of PNG and mapping of high risk "hotspots." RAR has proven to be a cost-effective, and pragmatic method of public health research, particularly suited to the resource-constrained settings of developing and transitional nations. , The initial elicitation research was conducted with key informants in each province using face-to-face semi-structured interviews (SSIs). The needs assessment encompassed SSIs with more than 120 key stakeholders as well as small group guided discussions with an additional 100 target group respondents.

Focus group discussions (FGDs) were also conducted with a range of program beneficiaries including males, females and commercial sex workers with the groups usually conducted in outdoor settings providing a more relaxed and naturalistic environment to explore knowledge, attitudes and risk behaviours of the various audience segments. Mapping of risk activities were also conducted around bars and clubs in the various island communities, markets and other high risk settings (HIV hotspots) identified by local stakeholders. Health centres, hospitals, schools and retail outlets were also mapped to provide a comprehensive localised setting for future communication resource and contraceptive products distribution.

Development Stage

Findings from the literature review were triangulated with findings from the stakeholder consultations and discussions with program beneficiaries. The formative research provided the backbone for the development of a draft communication strategy. As well as providing the four-stage operational model, the draft strategy recommended two-streams of communication: Stream 1 activities were designed to build awareness and risk perceptions of HIV/AIDS, while Stream 2 activities were designed to promote condom use through social marketing approaches. This component provided promotion and distribution of generic free condoms for those unable to pay, as well as branded condoms distributed through retail outlets; including a family planning brand and an edgier black label, ribbed condom brand named "Karamap" (Cover-up). The approach, which provided socially marketed, value-added, and generic condoms, was designed to build community acceptance toward

contraceptives generally, as well as a level of sustainability to the program through retail sales of the branded products, in the longer term (see Figure 1).

Advertising agency and market research firms were contracted through NHASP to support the creative strategy and independent monitoring and evaluation of the strategy phases. Message designs emanating from the needs assessment findings and the "awareness building" stage of the Phase 1 campaign focussed on achieving high recall among target groups of key campaign messages, and transition to building knowledge and risk-perceptions of risk and knowledge about risk prevention methods, and a number of other "culturally acceptable" campaign themes including being faithful to one partner, show how you can and you can't get HIV; an anti-stigma campaign phase incorporating messages from religious leaders and an HIV positive person, as well as condom social marketing messages focusing on the efficacy of condoms, building brand acceptance among youth, but also emphasising abstinence as a risk prevention option.

FGDs were also the preferred method for message pre-testing utilised as part of the second stage development of messages and materials, with the approach using trained moderators, and standardised discussion agenda. Independent pre-testing of a range of message designs, campaign and condom brands was commissioned utilising a standardised protocol of 8-10 FGDs conducted in all four regions of PNG. Message pre-testing was conducted following each phase of planning with message designs emanating from intelligence garnered from previous phases of the strategy and following stakeholder recommendations on key focus areas for the next phase of activity as the strategy evolved and new priorities emerged. Ethics approval for research conducted for all phases of the strategy was provided by the PNG National AIDS Council and Ministry of Health Ethics Research Committee (TBA).

Implementation Stage

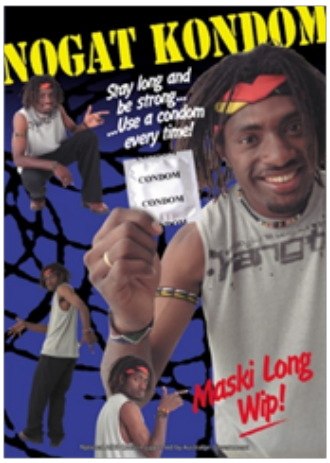
The phased campaign implementation approach adopted a comprehensive, multidimensional platform of communication activities including mass media, community media and interpersonal communication (IPC) approaches. As well as TV, radio and national print and outdoor advertising, extensive dissemination of community resources such as leaflets, posters, flip-charts and audio-visuals was implemented to all regions of the country. Community materials included a broad number of publications resources including leaflets: Facts on HIV/AIDS, Living with HIV/AIDS, Talking to children about HIV/AIDS, and Condoms and HIV/AIDS, which provided a comprehensive overview of the principals of prevention and care as well as an understanding of the key ABC messages supported by stakeholders in the staunchly Christian settings in which the campaign materials were disseminated.

During the early phases of the strategy, where the requirement was for rapid escalation of HIV/AIDS awareness to stem the tide of infection, more than 350,000 publications, as well as 1800 audio-visuals, and numerous other resources were distributed to Provinces around PNG to support community advocacy, prevention and care activities. Additionally, as the condom social marketing (CSM) component of the strategy evolved in phases3-5 of the strategy almost 12 million condoms were produced and disseminated around the country(See Figure 1).

Figure 1: Examples of Some of the 1.1 Million Community Media Resources Promoting Monogamy, Stigma Reduction and Information on Aspects of HIV/AIDS Distributed Across PNG During the 5-Year Term of the Communication Strategy, Including Design Manufacture and Placement Dispensing Units for Distribution of Generic Free Condoms In High-Risk Settings

Each phase of communication activity was supported by national TV, radio and print advertising (TV public service announcements are available at http://www.cpiweb.info/programs05.htm). An advocacy program included national launch activities attended by senior Government officials with these and other activities covered prominently through all major media outlets. A science based approach to media delivery was embarked upon to provide over 1200 TV spot placements across all national channels during an intensive 4-6 week programming period for each phase of the strategy, and support community based activities. As well as continuing to build HIV/AIDS awareness, knowledge and change attitudes and perceptions toward HIV over the strategy period, Stream 2 activities conducted mid-term into the strategy, had a specific emphasis toward condom social marketing (CSM) messaging. The CSM component of the campaigns was introduced to build socially marketed condom brands, to increase uptake of condoms generally while providing a degree of sustainability through partial cost recovery. CSM complemented the free generic condom distribution also conducted to low-income, high risk groups. The CSM activity stream was also designed to garner greater social acceptance of, and reinforce more positive attitudes toward, condom use with high-risk groups and the general population. A "high-risk settings strategy" of the CSM program focussed on more targeted interventions in community settings, including the promotion and dissemination of "Karamap" branded subsidised condoms in bars, nightclubs, and pharmacy locations around the country (see Figure 2).

Figure 2. Launch of Karamap Condom brand by the Health Secretary and Director PNG AIDS Council, and Promotional poster for "Long John Strong" High-Risk Males' Generic Condoms



Outcome Evaluation Stage

Given the need to adopt a population level approach to HIV/AIDS prevention and care, as a result of the rapid escalation of the HIV epidemic, the campaigns' impact and outcome evaluation stage was designed to evaluate strategy outcomes at a population level. M&E methods included both qualitative and quantitative approaches with qualitative approaches used initially for needs assessments and pre-testing of messages during each phase of the strategy development (not explored in detail in this article). Additionally, following each campaign phase, nationwide, cross-sectional, quantitative surveys were conducted to measure campaign KPIs.

The first wave of field research was conducted in Sept 2001 (prior to the phase 1 communication campaign implementation), to identify baseline KAP and to compare findings from the post campaign intervention surveys to follow. Subsequent waves of tracking were conducted following each campaign intervention in December 2001 (Phase 1 communication campaign), December 2002 (Phase 2 Campaign), February 2004 (Phase 3 Campaign) and December 2004 (Phase 4 campaign), with the end-of term evaluation conducted in September 2005.

Sampling Approach

The sampling system outcome evaluations was designed to reflect the essential characteristics of the population whilst remaining realistic and practical in administration. Although, pure probability-based sampling was considered academically superior, its first requirement was for an accurate enumeration of the universe to be sampled according to recent electoral rolls. The most recent electoral roll available in 2002 was unchanged from

that used in 1997, when the population was somewhat less than 5 million, 3.3 million voters (by definition 18+ years old) were registered. The electoral roll was considered highly unreliable and as such a pure probability-based sampling system was rejected.

Other systems used elsewhere have were also found to be unsuitable for use in PNG. For instance, residential sampling (eg, third house on the left, Kish grid to identify respondent) was seen as impractical as security considerations dictate daytime interviewing, as most Papua New Guineans are out in the daytime and do not welcome strangers into their compounds after dark. Given these considerations, the adopted sampling approach used a multi-layered quota system closely mirroring the population characteristics. It was clearly impractical to set quotas for all demographics. As such, location, gender and age group were considered to be the most appropriate layers, with employment, education and earnings being taken as random in situ (in practice these have been found to usually produce representative results over many years). In practical terms, this system, which resembles sentinel surveillance survey systems employed by WHO allowed for the security of daytime interviewing of strangers in public places with (quasi-) random selection of respondents. Teams visited ten or twelve different locations in each area for a certain period. Each interviewer was allocated a quota such as a specific number of males from the 20-25 age group. Supervisors kept track of the overall returns and allocated new tasks (in line with quotas) at the next sentinel site.

Location

The most practical and cost-effective approach (subsequently adopted) was considered to be a regionally-representative model with Papuan (Port Moresby), Mamose (Lae), Highlands (Goroka) and Islands (Kokopo) regions sampled equally (n=500 respondents in each region). This sample frame allowed robust sample sizes in all locations while also allowing for simple post-weighting proportionately to their populations (20%, 28%, 37% and 15% respectively).

Gender balance: Males slightly outnumbered females in the population at large, but given the nature of the subject matter and the predominantly heterosexual nature of transmission in PNG, it was decided that the sampling should place equal emphasis on men and women; as such a 50:50 balance was used. Age group balance: Quotas for age groups reflected their representation in the national population pyramid (for which reliable figures are available). The 'target market' for the campaign was originally defined as 16-44 years of age of both genders, but it was considered appropriate to include those who would become part of the 'target market' over the course of the campaign phase; consequently, 15 year olds were included, giving a final 15-44 years target market of six age groups each consisting of five-year groupings. Urban/rural balance: The national communication campaigns, incorporating mass-media and community resources to support community-based dialogue on HIV/AIDS were aimed at all sectors of the population, urban and rural. Although urban populations were seen to have the best media access and were therefore the main focus of the evaluation surveys, some understanding of penetration into rural areas was required and the sampling therefore specified a 25% quota for peri-urban/rural villagers. These were sampled at a minimum of six villages located at 25-40 kms outside each urban centre. Other Socio-economic factors: Beyond the quotas outlined above, education, employment and earnings were taken as random in situ. In practice, all socio-economic groupings were seen as fairly represented under such a regime, given suitable sample sizes. Example Quota Grid: (see Table 1)

Table 1: Multi-Layered Quota System for Sampling used for all Strategy Surveys (N=2000)

Papuan Region (n=500) Port Moresby and surrounds				
	Urban (n=375)		Rural (n=125)	
Age group	Male (188)	Female (187)	Male (62)	Female (63)
15-19 (24.5%)	46	46	15	15
20-24 (20.1%)	38	38	13	13
25-29 (18.5%)	35	35	11	12
30-34 (15.0%)	28	28	9	9
35-39 (12.4%)	23	23	8	8
40-44 (9.3%)	18	17	6	6
Total (100%)	188	187	62	63

illustrates how the adopted multi-layered quota system appeared in practice. The example is for use as a regional model with an overall sample of 2000 respondents (split equally between the four regions); with each region having a similar grid.

Survey Instruments

It was intended that any modification to the questionnaire between the baseline and subsequent waves would be evolutionary to allow valid comparisons to be drawn. Similarly, the agreed sampling system was designed to be adhered to for baseline and subsequent monitoring surveys. Successive waves of tracking monitored campaign effectiveness in terms of the KPIs including: unprompted and prompted recall of main media, campaign elements including; television, radio, print, and outdoor messages; community materials and activities; target group salience of campaign messages; improvements in knowledge, personal risk and self-efficacy perceptions; changes in attitudes (including HIV stigma); intentions and HIV preventive behaviours. The questionnaire used for all the surveys contained 40 questions, preceded by 5 screener questions including, agreement to take part in the survey, respondent connections to market research or advertising agencies, age, gender and location quotas, and media usage questions. Socio-demographics: Respondents were asked a range of socio-demographic questions at the end of the survey instrument to avoid respondent fatigue with the main items of interest. Items included date of birth, level of education, average fortnightly income of individual and the household, marital status, and geographic location (i.e., province and urban vs. rural location).

Campaign Recall: At the commencement of the survey respondents were asked about priority health issues, and then prompted on HIV/AIDS. Category cued recall examined recall of any HIV/AIDS messages related to the campaign as opposed to other HIV/AIDS messages. Prompted recall items examined recall of specific campaign messages (supported with prompt cards with images of campaign concepts) as well as the recall of the source of the messages. Key message take-out: This item explored verbatim responses of main messages received from all sources including mass media, community and interpersonal sources. Risk perceptions: Respondents were asked: Are you personally threatened by HIV/AIDS; How would you rate your own personal risk of contracting AIDS? and Do you think your chances of contracting AIDS no risk, low/moderate or high risk? A number of items explored HIV/AIDS knowledge including questions: What did you learn from the AIDS messages you have seen or heard? In your opinion, how is HIV/AIDS spread? Attitudes and Perceptions: Respondents were asked if the AIDS messages influenced or changed their attitudes towards AIDS and wow strong was their influence, on a 4 point Likert scale from Strongly influenced to Not influenced at all. Additionally, a stigma item asked: How can you tell if a person is infected? A self-efficacy item asked: Do you think it's possible for you to make the changes recommended in the messages to protect yourself from HIV/AIDS?

Behavioural intentions were explored through an item asking: As a result of the AIDS messages, what do you intend to do about AIDS prevention? As well as an additional question enquiring specifically about the respondent's sexual practices. Five point Likert scales (strongly agree to strongly disagree) were used to measure HIV/AIDS risk profiles of respondents including attitude statements: Tattooing, scarification and circumcision pose no risk of contracting AIDS; I think it's perfectly acceptable to have more than one wife or husband; I think it's inevitable that sometimes a man will have to discipline his wife by force; I believe it's OK to have sex with a stranger, without using a condom; and I think people with HIV/AIDS have probably got it through their own bad behaviour and deserve what they get. Volitional Control was explored through items asking: Have you ever been forced to have sex against your will? Have you ever given or received money, goods or favours in exchange for sex? Would you personally regard yourself as a religious person? and (If yes) What religion?

A number of items exploring protective behaviours included questions: Do you know what a condom is? Have you yourself ever used a condom? and; Last time you had sex, was a condom used? Additional items examined recall of condom brands including the socially marketed Karamap brand, questions on where the condoms were available, and perceptions of condom brand quality and price. Last, respondents were asked about voluntary counselling and testing behaviours through items including: Have you ever had an HIV/AIDS test? and If YES, did you go back to find out the results of your test?

Survey Administration

The questionnaire and all show-cards were translated into Pidgin and back-translated to ensure equivalence of items and scales. The instrument was

printed in dual language (English and Tok Pisin) and administered in whichever language the respondent preferred. The questionnaire and show-cards were pre-tested on a pilot sample of 20 respondents in Port Moresby before final modifications, printing and use in the field. Full-colour prompt-cards were prepared from original messages (using graphic imagery but eliminating text or branding prompts) to measure prompted recall of the AIDS campaign messages.

Analysis

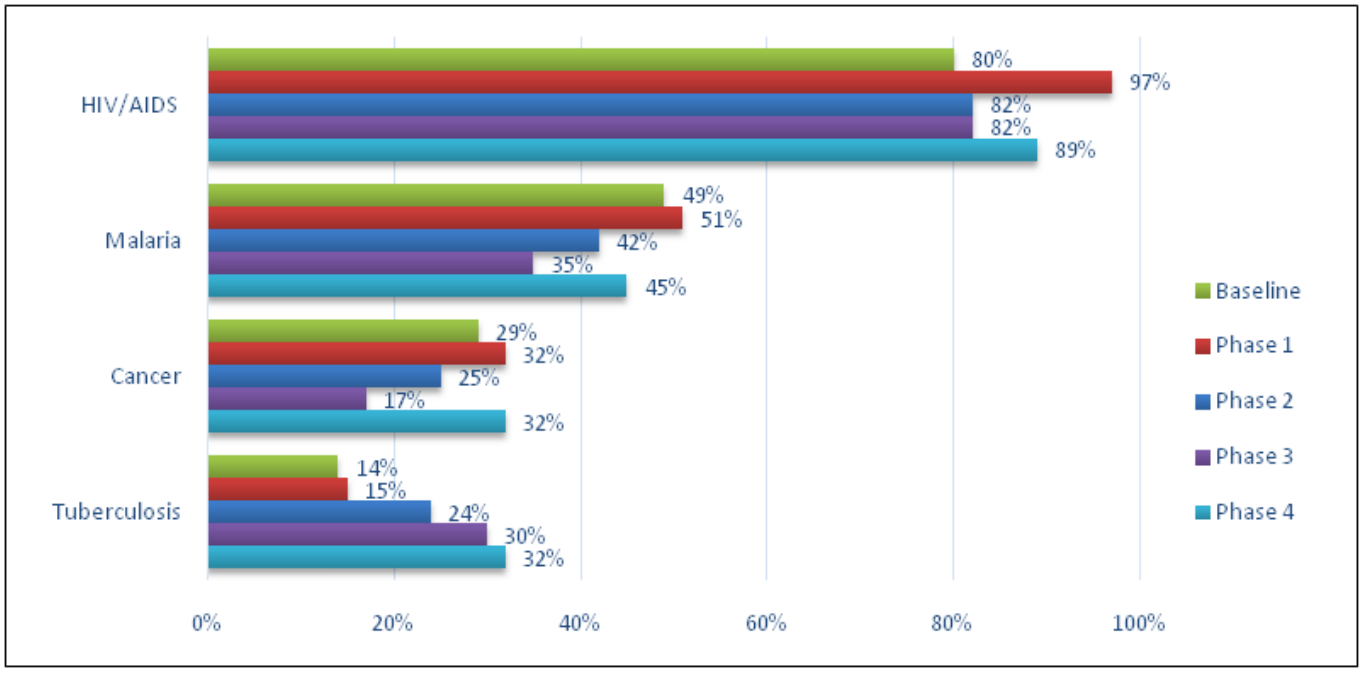
Chi-square analyses and independent measures t-tests were most predominantly used to examine relationships between predictor and outcome variables, related to campaign phases. This is in line with Agresti and Finlay (1997), where cells that significantly deviated from independence in the chi-square analyses were identified using adjusted standardized residuals greater than ±1.96.

Results

Given the comprehensive data collected from the five outcome evaluation surveys conducted during the strategy period, key findings only will be reported across the five waves of tracking. The results of the final Ph4 campaign tracking survey confirmed the overall success of the strategy in its primary aims and objectives of raising awareness of HIV/AIDS at population level, building risk perceptions and increasing protective behavioural changes, while identifying some areas of concern to be addressed in future programs. The following is a summary of significant findings, followed by discussion of findings.

Health Priorities and Message Sources: Front-of-mind recall of HIV/AIDS, elicited from the question "what are in your opinion the most important health issues facing PNG presently?" found that this was the most prominent health issue recalled at 89% in the Phase 5 survey (exactly as it had been following the Ph4 intervention). At baseline, recall of HIV/AIDS was still high 80% but rose to 97% following the Ph1 forthright 'wake-up' campaign to launch the strategy. Spontaneous recall of HIV/AIDS showed signs of maturation subsequently, dropping to 82% following the Ph2 and Ph3 campaigns but rising to 89% in the last two waves of tracking. Other health issues showed good correlation as controls with Malaria, Tuberculosis, Heart disease, Cancer and STIs all in similar ranges to previous waves of tracking but returning slightly higher figures than in Phase 4. (See Figure 3.)

Figure 3: Unprompted Recall of the Most Important Health Issues and Problems that PNG Currently Faces



Sources of HIV/AIDS messages: The most common reported sources of HIV/AIDS messages in the Ph4 survey were Radio 94%, TV 83% and Press 78% (all higher than previous waves). The figures were slightly lower in Ph4 for all these media but by margins of 3% or under – in Ph4, Radio returned 91%, TV 81% and Press 75%. The media reception profile of respondents in this survey's sample correlated closely to the previous wave but media weighting of the campaign may have varied slightly; although overall reception was still very good. Sources of messages from community settings was slightly down (68% in Ph5 against 72% in Ph4) with Outdoor media also marginally lower (36% in Ph4, 38% in Ph3). Advocacy through talk shows/commentaries (57%) and news articles (45%), on the other hand, were more prominent in Ph4 and word of mouth was as consistent as ever (95%).

Campaign Recall: Elicited through the question: What do you remember of the AIDS messages you just mentioned on radio, TV and newspapers recently? Found that unprompted recall of Ph4 campaign communications was good over all through mainstream media. The generic John Strong and Mary B Safe CSM executions fared somewhat better than average in recall (73% and 68% respectively). The John Strong and Mary B Safe condom dispenser executions returned somewhat lower figures (47% and 44% respectively), reflecting their lesser media flighting. The 'It Won't Happen to Me' and the two executions featuring sports star Mal Meninga ('Kids' and 'Karamap') were very consistent in the electronic media, returning similar figures of just over 50%. Following prompting and the question: (Show-card) Which if any of these ads do you remember seeing or hearing? The average prompted recall of campaign messages was unsurprisingly considerably higher all round (averaging 74% across all the messages) with the most recalled John Strong (generic) at 92% and the lowest Mary B Safe (condom dispenser version) at 64%.

Community Based Interventions: Given the comprehensive range of community based communication materials disseminated as part of the strategy, questions were asked relating to recall of AIDS messages in community settings. The first was "Do you remember hearing about HIV/AIDS from anyone in your community (and if so, who)?" The vast majority of respondents said they had (many from multiple sources, averaging 2.37 responses per respondent, similar to Ph4) while only 2% said they had not. The major sources of HIV/AIDS communication were: family and friends (94%), health professionals (69%), NGO Workers/Volunteers (20%), Church/Priest/Pastor/Elder (13%), Theatre/Drama Groups (13%), Community Elders/Councillors (10%) and Teachers/ Lecturers (10%). Following prompting on family discussion: "Do you remember discussing HIV/AIDS with your family and friends?" this figure returned a slightly higher (95%) affirmative response.

Message Impact and Exposure: These KPIs were measures through questions: "How much have the AIDS messages influenced or changed your attitudes towards AIDS …. How strong was their influence?" The campaign findings overall identified considerable influence of the recalled HIV/AIDS messages to audiences with those strongly influenced peaking in the initial launch stages of the strategy campaigns (Ph1. 83% strongly influenced) mid-lining at Ph3. (72% strongly influenced) and flattening out at a still creditable Ph4. campaign result (65% strongly influenced).

Message Take-out: Elicited through the question: Of all the AIDS messages, you have seen or heard recently, what were the main messages you got from them?" (multiple responses allowed), averaged 2.34 responses per respondent, which was the same as in Ph4. However, given the stronger focus of the Ph5 campaign on condom use, whereas Ph4 focussed more predominantly on stigma issues and gender violence, direct comparisons to previous results may be less than meaningful, but results suggested the core messages had been noted. The vast majority of respondents in Ph4 gave at least one response concerning condoms. This was reassuring given the fact that since Ph2, when the initial condom messaging commenced, condom-based responses had been in retreat (28%) while in Ph4, 'Be faithful' (50%+) was most prominent message. In Ph5, fidelity eased to under 49% (45% Be Faithful to one partner, and 4% No sex outside marriage/Sex within marriage only). Abstinence had been low at 7% in Ph4, but was offered by 22% of respondents in Ph5. The most prominent single response for the last campaign was 'Always use condoms for safe sex against HIV/AIDS' (50%). This was accompanied by numerous other condom responses: No Condom no sex (17%), Always use Karamap (9%), Condoms for more than one partner (7%), Too many AIDS cases so use condom (6%), If you take the risk, use condom (4%) and other lower level condom

references totalling 5%. Positive condom-based message take-outs as noted above totalled 98%, but there were also some negative take-outs along lines noted previously in qualitative research, anecdotally and in letters to editors, etc: Promoting condom use and sex any time (7%), encourages promiscuity (3%).

HIV/AIDS Knowledge: Elicited through the question: What did you learn from the AIDS messages you have seen or heard?" (multiple responses allowed,) averaged 3.1 responses per respondent. Be faithful was again the most prominent mention (67% in Ph4 vs 73% in Ph3). 'Don't have more than one partner was at 49% (vs 47% Ph3). 'If more than one partner, use a condom' was well up in Ph4 (52% vs 39% Ph3) as was 'Use condoms every time' (46% vs 36% Ph3). Abstention was consistent at 32% (31% in Ph3). To another question on message-believability, "Do you feel the AIDS messages you've seen and heard were true?" 94% replied affirmatively in Ph4 (against 97% in Ph3).

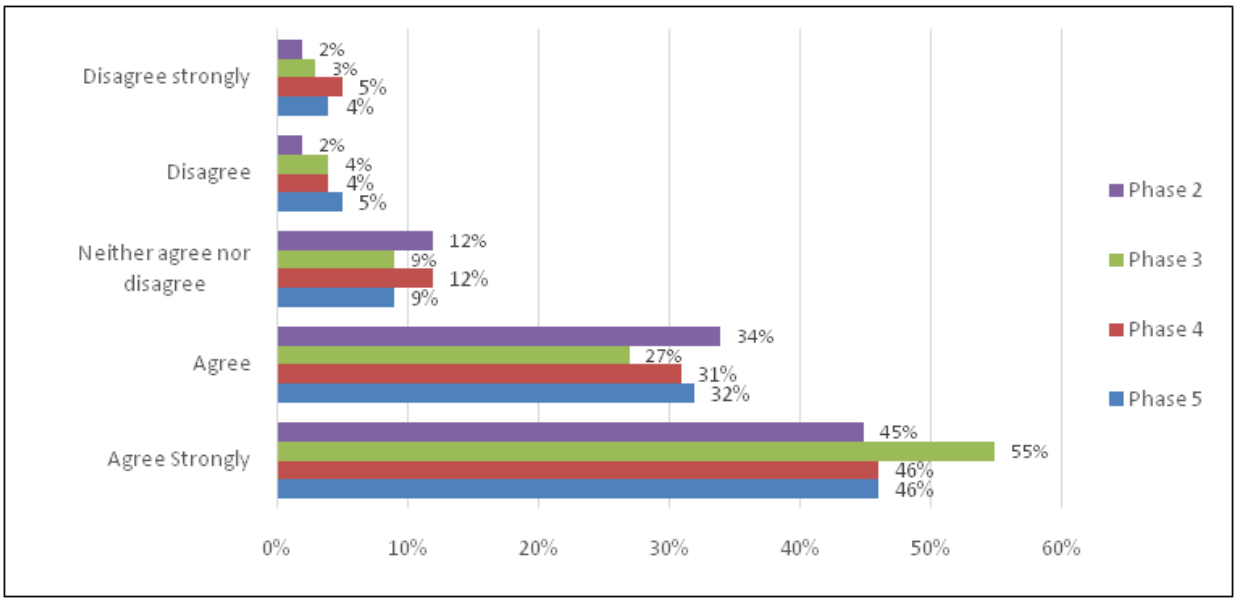
Personal Risk Perceptions: This indicator was elicited through the question: How much do you feel PERSONALLY threatened by AIDS?

The overall pattern was very similar in the Ph4 post survey to previous surveys but with a continuation of a maturation effect noted previously, with Ph5 respondents seeing "AIDS is somewhat of a threat to me" (16%), and AIDS is a very serious threat to me 61% vs more robust numbers (13% and 79% respectively) having strong affirmative views following the Ph1 campaign. An additional question on risk perception, asked following detailed questioning on sexual behaviour, VCT and condom usage, asked: "How would you rate your own personal risk of contracting AIDS?" The pattern of responses was similar to earlier surveys, but with a tendency towards assessing one's personal risk as lower (as in the perceived threat question above). Those rating themselves very high (7%) or high (8%) decreased, while those rating themselves at low risk (30%) to no risk at all (37%) increased. The drop in risk perceptions from very high (dropping from 11% for Ph1 to 7% for Ph4) and high risk (dropping marginally from 9% Ph1. to 8% in Ph4) Whether the results to the above two questions are influenced by a greater understanding of the HIV/AIDS over the course of the strategy or simply by complacency is unclear.

Self-Efficacy Perceptions

A single item question asked about confidence and skills to make protective behavioural changes: "Do you feel it is possible for you to make the changes recommended in the AIDS messages?" in Ph4, almost 90% replied affirmatively (46% strongly agree; 32% agree), 4% negatively and 5% were unsure, with these figures being almost identical to Ph3. Campaign after plateauing at Ph2. (55% strongly agree; 27% agree) which was a significant improvement from a baseline of 79% agreement (45% strongly agree; 34% agree) (see Figure 4).

Figure 4. Self-Efficacy Perceptions - I think l can do what's Necessary to Protect Myself from HIV/AIDS Infection



Stigma Attitudes

The final two stigma-related attitudes items were new for Ph2 (no previous comparative data available): "I think people with HIV/AIDS have probably got it through their own bad behaviour and deserve what they get". This scale was included to measure public perceptions on people living with HIV/AIDS (PLWHAs) in terms of stigma and discrimination. The Ph2 findings were alarming, identifying that 70% of people agreed or strongly agreed with this attitude, with only 10% expressing any degree of disagreement. Following the Ph3 which (as a result of findings from Ph2) focussed on countering judgemental, stigmatising and discriminatory attitudes, agreement with these stigmatising attitudes dropped to 58% with disagreement at 16%. In Ph4, levels of agreement were unchanged at 58% but some who had previously expressed no opinion either way now expressed disagreement with this proposition (22%). Another stigma item which was positively framed: "I think people with HIV/AIDS should be treated with the same respect and care that we would treat anyone else in our community with a serious illness", identified 62% agreeing with this sentiment and 13% following the Ph2 campaign with a positive swing to 65% agreeing and 10% disagreeing following the Ph3 campaign. In the final Ph5 campaign, some who had previously expressed no opinion now expressed opinions stonger overall agreement (69%) while 12% disagreed.

Behavioural Intentions

This indicator was elicited through several questions including: "As a result of the AIDS messages, what do you intend to do about AIDS prevention?" To this open question, the overall pattern was similar to previous surveys with many respondents talking about it or warning others at risk which remained consistent across all waves of tracking. However, an important indicator of intention to change sexual behaviour showed consistent improvements across the 5 years of the strategy from affirmative responses in Ph1. (16%), plateauing in Ph2. (25%) before achieving a creditable and significant increase from the baseline in Ph4. (23%). Given the importance of this indicator a more specific question prompting on sexual behaviour: "As a result of the AIDS messages, what do you intend to do about your sexual practices?" identified similar overall patterns to previous findings, however, with a drift away from reliance on fidelity (55% Ph4, vs Ph1 67%), and reassuring drifts towards abstinence (12% Ph4, vs 9% Ph1), and using condoms (29% Ph4, vs 20% Ph1).

Protective Behaviours

A critical success indicator for the strategy was to ensure a high uptake of protective behaviours through contraceptive use, with two items exploring this indicator: "Have you yourself ever used a condom?" and "Last time you had sex, was a condom used?" Both indicators identified significant improvements in agreement with ever using a condom from baseline (Ph1. 42%) to midline (Ph2. 46%) to end of term of the strategy (Ph4. 51%). Similarly, condom use at last sexual contact also identified significant improvements over the term of the strategy (Ph.1 24%; Ph2. 29%) and finally with a sharper focus back to condom use in the last year of the strategy (Ph4. 32%). Reassuringly, unprompted recall of the socially marketed Karamap condom brand was high from the initial launch Ph2. 89% until the final campaign (Ph4. 83%). Additionally, behaviours related to VCT which was available in the final years of the strategy were explored with respondents asked about HIV testing; firstly, had they ever had one? In the final Ph5 survey, 17% claimed they had been HIV tested which was similar to the 18% who made this claim following the Ph4 campaign.

Message Frequency

A process indicator designed to elicit perceptions of potential message wear-out or message fatigue asked the question: "Which of the following best describe the frequency at which you have seen/ heard the AIDS messages?" The strategy campaigns identified a gradual incremental increase in respondents expressing "seen the ads too many times" Seen ads too many times" from a baseline of 24%, to a plateau at Ph3. (52%), before reducing at Ph4. (49%). More appropriate perceived frequencies of messages: "Seen ads 4 times or more" identified a peak at Ph3. (67%), with the last campaign phases (Ph4. And Ph5) showing consistent findings of 39% agreeing with this sentiment, and only 11% at Ph4. having seen the messages 3 times or less.

Strategy Acceptability

A final process indicator important for GoPNG and donors was reassurance that the campaign messages were credible and acceptable to the broader public. One question asked: "Which organisation(s) do you think are running the AIDS awareness campaign?" This indicator showed gradual improvement in recall of highly credible agencies running the campaign with the final intervention showing recall of the major stakeholders and supporters was the

best yet – 82% recognised the National AIDS Council, 32% AusAID and 22% UN agencies' involvement. A second item asked: "How important do you think is the organisation's work in AIDS prevention?" In assessing perceptions of the importance of the HIV/AIDS work of the stakeholders, following a peak at 93% after Ph1 ground-breaking campaign work, the figures have subsequently plateaued at 86% 'very important' (changed by 1% or less over phases Ph1, Ph2, Ph3 and Ph4).

Discussion

Overall findings over the course of the 5 year strategy identified a significant increase (over 20%) in awareness of HIV/AIDS as the most important health issue in PNG, a significant rise in awareness from all media sources of HIV/AIDS issues, a significant rise in knowledge on partner reduction, abstinence and condom use as protective responses, a significant rise in knowledge of PMCT, and infection status, a significant rise in negative attitudes towards skin piercing, sharing of sharps, and alcohol and drug related risk, a significant rise in attitudes towards condom efficacy, a significant rise in behavioural intentions towards protective behaviours and a significant rise in condom use (protective behaviours) following the mid-term review. It should also be pointed out that the last Ph4. campaign evaluation also showed significant increases in single partner sex and a reduction in multiple partner sex, despite the focus of campaign activity being toward condom social marketing.

High recall of campaign with urban and peri-urban groups identify that population level interventions have the ability to rapidly set an agenda for a health issue and change social norms and cultural practices around that issue if consistent multilevel, synergised approaches are adhered to over a period of time. Short term programs of 1-3 years will have less chance of achieving these ends, particularly if the program does not adopt strategic planning models which operate to build the evidence on what works to create continuously improve on and build more predictive programming models.

The results suggest that as a result of the campaigns HIV/AIDS discussion within the communities is widespread and the subject was brought out in the open. The impact of the intensity of campaign messaging in relation to respondent recall is made clearer when examined in relation to the scale of resource distribution in community settings. The findings identify rises and falls in campaign recall with the scale of distribution. This points to the importance of large scale dissemination of messages across multiple communication platforms in the early stages of any emerging pandemic threat (see Table 2). Despite the good recall of community sources of HIV/AIDS information which identified greater discussion on the issue within communities, engaging groups such as faith-based organizations and the teaching profession in AIDS prevention activities remains a challenge, given the low recall of messages from these community gatekeepers in all phases of the strategy.

Table 2. The Relationship between the Scale of Resource Distribution and Recall of Community Sources of HIV/AIDS Information

HIV/AIDS Strategy Community Communication Resource Distribution	Resource Types	2002	2003	2004	2005
	Brochures Posters	350,000	1,420,000	1,906,000	516,000
	Audio Visuals	1800	216	107	25
	Merchandise	65,000	97,000	117,000	29,000
	Total annual community resources distributed	416,800	1,517,216	2,023,107	545,025
Awareness of Community Sources of HIV/AIDS information	Baseline Survey	2002 Phase 1 Campaign Survey	2003 Phase 2 Campaign Survey	2004 Phase 3 Campaign Survey	2005 Phase 4 Campaign Survey
	41%	48%	68%	74%	72%

The campaign findings overall identify strong influence of messages to audiences as a result of evidence based approaches to message design and pre-testing of messages. The peaking in early campaign phases of message influence (83% strongly influenced) and flattening out in the latter years of the strategy to a still creditable Ph4. campaign result (65% strongly influenced) indicates high impact of messaging may be best achieved in the launch phases and early years of the strategy with a rapid onset of maturity given the intensive scale of HIV/AIDS messages at all levels. Given these facts and the stigmatising health issue in question, there is the need to continue to build momentum with strategy campaigns through more novel, memorable and impactful messages as the strategy matures.

Findings for personal risk perceptions identified respondents who identified themselves at very high or high risk dropped from 20% for the Ph2 campaign to 15% for the Ph5 campaign. However, whether these results are influenced by a greater understanding of HIV/AIDS and improved confidence to deal with the threat, or were simply due to complacency over the course of the strategy is unclear. Findings in regard to condom use protective behaviours identified the potential for cumulative increases in social acceptability and more frequent use of condoms, in line with targeted messages during the term of the strategy, as well as the importance of synchronised dissemination of condoms, with CSM activities, in retail and free distribution points around the country.

Process indicators on the perceptions of the frequency of messages identified potentially high levels of message frequency with around 50% of respondents claiming to have seen the messages "too many times". Rather than being an indicator of a potential diminishing rate of returns for campaign messages (ref.), the findings may also indicate the importance of message saturation when dealing with emerging pandemic threats, given the increased recall of the campaigns in line with message resource dissemination through community channels. Another factor relating to messaging on stigmatizing issues is the potentially higher level of discomfort by audiences to these messages which, while aggravating some audience members, may at the same time, prompt higher levels of recall and calls to action.

Of note is the positive drifts from various campaign themes relating to stigma reduction and condom use, given the need to develop different message themes responding to findings from successive phases of the strategy. The approach testify to the efficacy of population level interventions to rapidly set campaign agendas across multiple communication platforms, and impact on attitudes and behaviours related to priority health issues.

However, a note of caution is that programmers need to be wary of a maturation effect over the course of an intensive 5- year communication strategy, and this may be particularly so with potentially challenging messages delivered to high risk, low-efficacy groups facing a range of other social and cultural challenges. As such, the communication strategy needs to develop innovative new campaign messages with strong cut through to continue to build engagement and overcome complacency in the light of potentially depressing scenarios. Another area of concern within the condom social marketing (CSM) stream of communication is the possibility that overt promotion and broad distribution of contraceptives, which is consistent with CSM models internationally, may be problematic in PICTs with their overlay of conservative Christian values. Given this fact the novelty of heavy promotion of condoms and messages on their efficacy, may initially increase promiscuous behaviours. This was evidenced by the move away from fidelity with more overt promotion and distribution of condoms in the latter phases of the strategy, with a subsequent drift toward an increased number of sex partners. Given this CSM challenge, programmers should be judicious in the scale of contraceptive promotion, despite the need to change social norms, or making claims on the efficacy of condoms, to the detriment of abstinence and fidelity messages.

Last, there was criticism by external reviewers based in the South East Asia region of the ABC approach decided upon by stakeholders in PNG, The approach was seen as being simplistic and not sensitive to the scale of risk behaviours occurring in the country. Despite the criticism, program planners must continue to engage with stakeholders and work within the broader spiritual and cultural context prevalent in the country of operation. Experience in PICTs has identified the prevalent conservative Christian values, which are quite different to the cultural paradigms in the more "sexually liberated" South East Asian countries. As such, strategic approaches and messaging needs to be culturally nuanced to provide messages which will be both effective and acceptable to the

social and cultural values of the political elites endorsing the program, while still building risk perceptions toward the health threat and normalising risk reduction prophylaxis through a measured approach to condom promotion.

Study limitations included the sampling system employed due to insecurity of fieldworkers visiting households in rural areas during evening periods and capacity issues. Limited human resources, organisational set-up and technical capacity at the field level also required more efficient planning at central level, prior to field team deployment. Other limitations involved the study method, which was largely an, in-field approaches.

Conclusion

It was likely that the integrated approaches, combining strategic communication with condom social marketing, had an impact in flattening the rapidly rising curve of HIV infection and averted a mid-level AIDS epidemic in PNG, as experienced in African countries exhibiting similar risk behaviours. Strategic approaches provide for greater understandings of target audience needs and wants, and the development of pre-tested messages delivered with sufficient reach and frequency to address risk behaviours for priority health issues in the Pacific.

Recommendations are for greater consideration by donors and governments of longer term (3-5 year) strategic approaches to address the challenges of emerging pandemic threats such as HIV/AIDS, and other communicable and non-communicable disease prevention programs through the planning, development implementation and evaluation of best practice, strategic communication approaches. The iterative process of building theory from practice facilitates continuous improvements of the program while at the same time, building on what works. As such, more strategic, evidence based approaches need to be embarked upon to build on the dearth of academic literature currently evident in a number of PICT development programs.

Acknowledgements

The authors acknowledge the PNG National AIDs Council (NAC), and the National HIV/AIDS Support and Prevention Project (NHASP) which was a Government of Australia program funded by the AusAID (now the Department of Foreign Affairs and Trade). The authors also thank the many stakeholders and program beneficiaries who provided insights and supported the delivery of the PNG HIV/AIDS communication strategy.

Reference

1. UNAIDS (2016) Fact sheet - Latest statistics on the status of the AIDS epidemic.

2. AFAO (2015) HIV statistics for Asia and the Pacific The Australian Federation of AIDS Organisations.

3. Carlson C, Rudland E, Lepani K, et al. (2012) Responding to Crisis Evaluation of the Australian Aid Program's Contribution to the National HIV Response in Papua New Guinea 2006–2010 AusAID Office of Development Effectiveness Canberra ACT.

4. World Health Organization (2000) National Aids Council National Department of Health Papua New Guinea Consensus Report on STI HIV and AIDS Epidemiology Papua New Guinea.

5. O'Sullivan GA, Yonkler JA, Morgan W, (2003) A field guide to designing a health communication strategy Baltimore Johns Hopkins Bloomberg School of Public Health Centre for Communication Programs.

6. Airhihenbuwa CO, Obregon R (2000) A critical assessment of theories models used in health communication for HIV/AIDS Journal of Health Communication 5: 5-15.

7. Agha S (2003) The impact of a mass media campaign on personal risk perception perceived self-efficacy on other behavioural predictors Aids Care 15: 749-762.

8. Albarracin, D Gillette, JC Earl, et al. (2005) A test of major assumptions about behavior change A comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic Psychological Bulletin 131, 856-897.

9. Turk T, Elkins D (2013) Using a Formative Research Rapid Assessment Method to Support the Development of a HIV/AIDS Antiretroviral Therapy Communication Campaign in Kenya J Infect Dis Ther 1: 120.

10. Kamineni VV, Turk T, Wilson N,et al. (2011) A rapid assessment and response approach to review and enhance advocacy communication and social mobilisation for tuberculosis control in Odisha state India BMC Public Health 11: 463.

11. Scrimshaw NS, Gleason GR (1992) Rapid assessment procedures–qualitative methodologies for planning and evaluation of health related programmes International Nutrition

Foundation for Developing Countries (INFDC) Boston USA Library of Congress.

12. Aggleton P, Malcolm A (2004) Rapid assessment and response Adaptation guide for work with especially vulnerable young people Geneva WHO.

13. WHO (2012) Immunization Vaccines and Biologicals Sentinel Surveillance.

Citation: Tahir Turk (2017) An Integrated Approach to Strategic Communication and Condom Social Marketing to Address the HIV/AIDS Epidemic in Papua New Guinea. SF J AIDS HIV Res 1:1.