Literature Review Notes
KAP – Global and Local
January 2013

Introduction

"Reductions in HIV transmission in entire countries or regions or in specific risk groups inevitably result from a complex combination of strategies and several risk-reduction options with strong leadership and community engagement that is sustained over a long time. The effective mix will vary by transmission dynamics and several other factors. Thomas J Coates, Linda Richter, Carlos Caceres. HIV Prevention 3: Behavioural strategies to reduce HIV transmission: how to make them work better *The Lancet* 2008; 372: 669–684.

TL2 wants to engage in a change process to grow more responsive to the needs of PNG in terms of those people most at risk of HIV and STI transmission, and those most at risk of becoming sick with AIDS. The mid term review and AusAID have highlighted the positive activities that TL2 has been engaged in and would like us to move towards working with the most at risk people. AusAID is using the term Key Affected Populations – these are the people who are most likely to engage in activities that expose them to HIV and STI and those people that already have HIV and are therefore at risk of AIDS, if they do not have access to ART and health services. Similarly, people with STI are also at risk of developing long-term problems and are more vulnerable to HIV if they do not get treated at a health service. Many of us have already commenced a focus on KAP in our area, these are referred to as locally identified KAP.

To help us speed up this change process, TL2 has developed a presentation which we will now go through slide by slide so that we understand why we need to work with KAP and who the KAP might be in our place. Not only is working with the key affected populations the ethical road to take – in that we are working with the people who need us the most – but working with KAP is also the most efficient road, as money is not wasted on people who have minimal or low risk of HIV.

Evidence Based – What does this mean?

'Evidence' is used (sometimes manipulated) in the law courts as examples of data that indicate, suggest, or prove that something is or is not true. In science, we have a rating system for data so that we can see if something is definitely true, or simply suggests that something may be a possibility or that something causes or is related to something else. So when we talk about an 'evidence base' for our project we are talking about the studies and science of our work. Which things have been proven to be effective in terms of prevention, treatment, and care of HIV and STI. The problems with evidence in health science (just the same as in the court system) is that sometimes we misinterpret the evidence or the evidence is not very strong, but we take it as proof of something. The strength of evidence

depends on how much effort the researchers have put into reducing the potential for bias – or the things that can influence a particular outcome; for example: in a study to see if smoking cases lung cancer, air pollution from a nearby factory can cause some challenges in interpretation of any data. It would be difficult to prove smoking caused the lung cancer in people living near the factory, when it could have been caused by the factory smoke instead. So how do we (who are not scientists) know if some fact that comes from a Science Journal, or a health professional is true? How true is it, and what level of evidence is there to support the statement of evidence? We also know that new things are being discovered and found out all the time – this means, something that may have been true last year, now with better science and a higher rating of evidence strength behind it, may now be proven as 'not true'. For example, several years ago, it was reported that the HRT medicine that some women take to replace the hormones lost following the menopause, had been shown to increase the risk of heart disease. But now a better reading of the data, more data and more accurate statistical analysis has found that HRT does not increase the risk of heart disease. Here is the rating system from the US Preventive Services Task Force, so we can work out how strong the evidence for a given subject really is (http://en.wikipedia.org/wiki/Evidence-based_medicine).

Level I: Evidence obtained from at least one properly designed randomized controlled trial.

Level II-1: Evidence obtained from well-designed controlled trials without randomization.

Level II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

Level II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled trials might also be regarded as this type of evidence.

Level III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Another, similar scale for evidence strength from Gray, J. Evidence-based Healthcare. London: Churchill Livingstone, 1997.

Type	Strength of evidence
I	Strong evidence from at least one systematic review of multiple well-designed, randomized controlled trials.
II	Strong evidence from at least one properly designed, randomized controlled trial of appropriate size.
III	Evidence from well-designed trials without randomization, single group pre-post, cohort, time series, or matched case-control studies.
IV	Evidence from well-designed, non-experimental studies from more than one centre or research group.
V	Opinions of respected authorities, based on clinical evidence, descriptive studies or reports of expert committees.

So ideally, before we embark on activities we need to look at the levels of evidence behind our ideas for activities and target populations. It is not always possible to have level 1 evidence for every intervention, as randomised controlled trials are very expensive and require serious scientific knowledge and skill – here is where we can use other peoples science and lower level evidence if necessary. Cardno, AIDS Project Management Group, AusAID, and NACS are all committed to 'evidence based practice' – which includes us – the team doing the work. PNG is commencing an Integrated Bio-Behavioural Survey where research is conducted across of all provinces with randomly selected individuals to participate in research about their sexual activities and a blood test for HIV. This will result in sound evidence of the type of epidemic we have in PNG and who the KAP really are. Until we have the results from the IBBS, we need to look at the existing evidence.

NACS has funded literature reviews of the research undertaken in PNG in relation to HIV and AIDS. There is one being conducted at present for the years 2009, 2010, 2011 and up to June 2012 (Dr Reinhold Muller and Dr David MacLaren). A previous review was conducted for 2007-2008 by King and Lupiwa and is available from the NACS. While the latest review is not yet published, it is prudent for Tingim Laip to read and implement the recommendations of this report as soon as it becomes available. There is a gap in PNG with 'evidence' that is rigorous and methodologically sound, so some caution is required when interpreting current data and reports.

History

Before we look at HIV and the modern STI epidemics, it can be useful looking at previous sexually transmitted epidemics that have impacted on our world, and explore the community situation then. Syphilis came to Europe in 1495 during the French Invasion of Italy. Christopher Columbus crew most likely bought Syphilis back to Europe from the Americas.

Who was first to catch Syphilis?
- Sailors, Soldiers
- Female Sex Workers
- Other Customers of sex workers (traders, merchants)
- General population

Basically, the mobile men with money and multiple partners interacting with sex workers caught syphilis first and through them it was then transmitted to the rest of society … wives, girlfriends.

Because sex workers were stigmatised due to their work, their drinking and community beliefs that they lured good boys away from their wives (home wreckers), they did receive the blame for the Syphilis epidemic. But this was just another reason for blame and eroto-phobia (or an anti-sex belief system). But this "blame the other" phenomenon went international with the various names for Syphilis - *The French Disease, The Spanish Disease, The Italian Disease, The English Disease* - this way back in 1495. Basically people and society blamed which ever country they were currently fighting a war with or had historic hostilities with.

Moving into the 20th Century and the first and second world wars, we see Syphilis and other STI again becoming popular topics for community angst – this time because many soldiers were (of course) having sex with sex workers during their free time – remember, if one might die tomorrow, it is best (from a male sexuality perspective) to enjoy now, to have sex now, to get some comfort and some love now, because tomorrow it may not be possible, indeed, it may never be possible to enjoy sex again if one is dead. This also impacts on a mans commitment to use condoms (since a soldier could be shot dead tomorrow, why worry about an STI now?)

Sometimes "community" does not know the best interventions from a public health perspective – but this does depend on what our definition of community is and who has the loudest voice. For example, during the STI increases because of the war (international population mixing, lots of single men needing comforting, lots of women needing money). There was Community Campaigns against distributing condoms for soldiers, but on the other hand there was Ettie Rout setting up brothels for soldiers where the sex workers were checked and treated for STI and condoms were available. There some churches, supported by some doctors and community activists campaigned against penicillin being used for Syphilis. The arguments they used are examples of misguided thinking or poor public health understanding.

- Encourage promiscuity
- No longer any punishment for sexual sin (STI)
- No negative consequences for sexual pleasure outside marriage
- Women's rights (Counter-intuitive to us) The argument here was that men will go out and have more sex because there was a treatment available (penicillin). We know this is not true – men are rarely motivated to have sex by the knowledge that treatment is available for STI (pleasure, orgasm, sex is the behavioural motivation).

Here we see 'community' as a problem because it was one segment of community wishing to maintain a certain type of community by excluding or punishing others who perhaps wanted a different type of community. Nothing new here. We have witnessed the same predictable reaction in the era of HIV all around the world - against condoms, against PEP, against circumcision, against treatments being free, against needle and syringe programs for Injection Drug Users, against sex education for young people etc.

We have seen and heard similar arguments now from the same groups of people when dealing with HIV. For example, the Anti Condom rhetoric from some churches & church employees – "condoms encourage people to have sex with many partners"; the Anti male Circumcision rhetoric from some social scientists – "circumcision will encourage men to have more sex and not use condoms"; and Anti sex education rhetoric from some churches & church members – "sex education will encourage young people to have sex". Just as in the 1940's these arguments do not make sense when we look at science and the evidence from research of what particular interventions work to reduce or prevent infections.

Know your Epidemic: Know your Response

UNAIDS urges national HIV Programmes & those who work within them to 'know your epidemic' so you can understand what is needed for the response. This is so we can really

be sure that we are focussing our efforts on the people that need it most, and so that we can have a meaningful impact. The big questions that we need answers to before we can implement activities are in relation to the next 1000 new HIV infections in PNG.
– Where are these new infections happening?
– What are the activities that seem to cause people getting infected?
– Why are these new infections happening?
(UNAIDS, June 2012.Combination Prevention 30th Meeting of the UNAIDS Programme Coordinating Board)

David Wilson and Daniel Halperin (*The Lancet* 2008, 372:423-26.)
also discuss HIV epidemic knowledge in terms of whether our local epidemic is generalised or concentrated – a fundamental difference. *"We propose the following definition: An HIV epidemic is concentrated if HIV transmission is primarily attributable to HIV-vulnerable groups and if protecting HIV-vulnerable groups would protect the wider population. In contrast, an HIV epidemic is generalized if the converse is true – HIV transmission is not primarily attributable to HIV-vulnerable groups and protecting HIV-vulnerable groups would not in itself protect the wider population."*

Concentrated and Generalised HIV Epidemics
"UNAIDS characterizes HIV epidemics as concentrated, low-level, generalized and hyper-endemic. These distinctions between epidemic types are intended to point to the different population dynamics which characterize different epidemic situations. A concentrated epidemic (such as that in the Americas, Europe, the Middle East, Asia and Australasia) is defined as one in which the virus has spread among sub-populations reaching prevalence of over 5%, while in the general population it is less than 1%. A low-level epidemic is one in which HIV prevalence is less than 1% in the general population and less than 5% in any subpopulation, whereas generalized epidemics (e.g. those in large parts of southern Africa and parts of east Africa) are self-sustaining via heterosexual transmission with prevalence above 1%, and above 15% in a hyper-endemic generalized epidemic."

David Wilson & Shilpa Challa from the World Banks Global HIV Program says *"Concentrated and generalized epidemics are fundamentally different and require discrete approaches … Concentrated epidemics require concerted focus on HIV-vulnerable groups and high coverage of proven, evidence-based approaches. Generalized epidemics require fundamental changes in social and community processes and norms.*
Significant behaviour change has taken place and has contributed to reduced HIV prevalence in a growing number of countries. Behaviour change has myriad causes and cannot be attributed to any single program, reflecting a complex range of spontaneous and planned, formal and informal, local, national and international initiatives. With this caveat, concentrated epidemics may be reversed primarily through increased condom use, supported by reductions in the proportion of men visiting sex workers. Generalized epidemics may be reversed primarily by normative change and partner reduction in the general population, reinforced by condom use, particularly among individuals with rapid rates of partner change."

Concentrated and Generalized epidemics

Concentrated epidemics	***Generalized epidemics***
Driven by sexual and injecting practices, especially among HIV-vulnerable groups, including sex workers, men-having-sex-with- men	Driven primarily by sexual behaviour in the general population
Require large-scale to protect HIV-vulnerable groups	Require large-scale, fundamental changes in community norms and sexual values and practices
Expanding coverage of proven interventions vital	Social and community change processes critical

David Wilson and Daniel Halperin, "Know your epidemic, know your response": A useful approach – if we get it right. *The Lancet* 2008, 372:423-26.

PNG – Generalised or Concentrated Epidemic?

What about PNG? If we need to "know our epidemic to know our response", we must be able to answer this basic epidemiological question. Here is the testing data from the National Department of Health HIV Surveillance Unit for the past few years from all the tests performed in PNG.

Total Annual New HIV+ Tests in PNG (All Populations)

Year	No. Tested	No. Positive	% +	Trend
2006	16691	3673	22%	↓
2007	32319	5038	15.58%	↓
2008	120607	5084	4.21%	↓
2009	123661	3711	3.0%	↓
2010	138581	4208	3.0%	-
2011	146735	4612	3.1%	-

*Jan-Aug 2011 data only

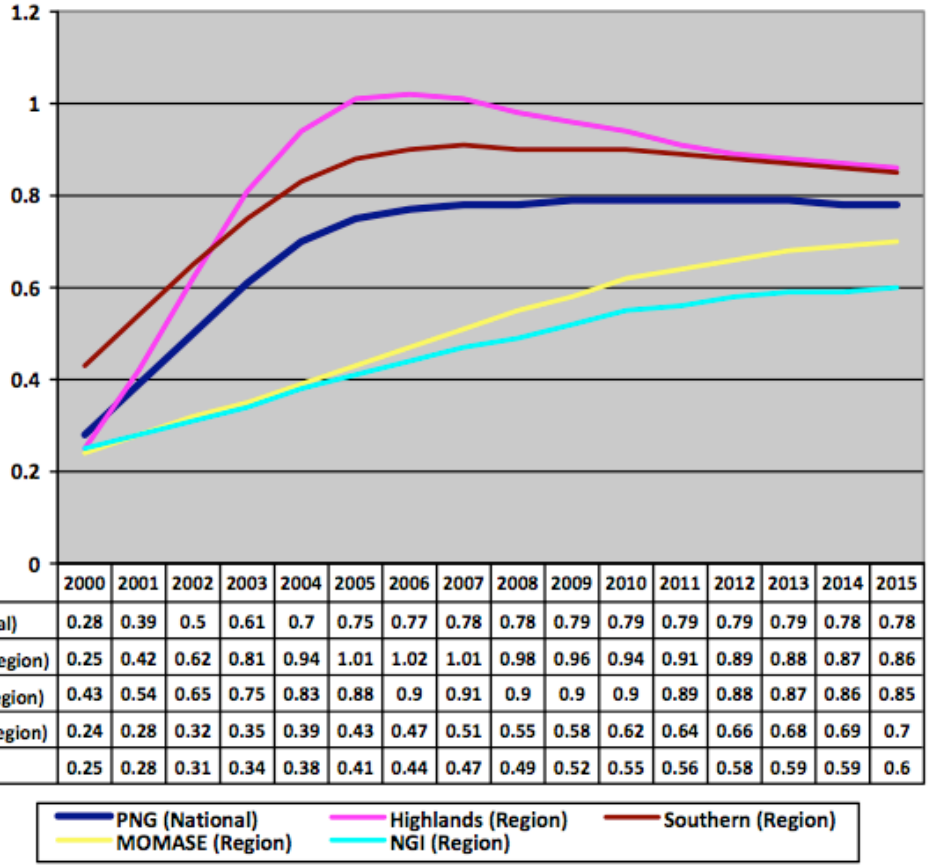
evidence, but rather numbers of people who are accessing HIV testing. Remember that the true prevalence is only possible by testing a much larger representative sample of people – such that will be performed with the Bio-Behavioural Surveillance Survey being undertaken this year 2012. They will test a representative random sample of people aged 18-50 from all provinces. This age group is chosen as the 'sexually active population'. The people being tested at the moment through health facilities and HIV testing centres are not representative of (meaning, not the same as) the whole general population – they have different characteristics – they might be sick, they may have had some risk activities, they may have an STI, they might have TB, they might be pregnant! All these characteristics mean that these people will be more likely to test HIV positive than other people. Because of this, countries have often used pregnant women as an indicator of the general population – but it is also not that accurate and almost all countries have lower prevalence then ante-natal clinic (ANC) data once they conduct an IBBS. However, here is the ANC data for the past few years from PNG so we can use this as evidence (NB, this is not Level 1 Evidence).

Annual New HIV+ Tests in PNG Amongst Pregnant Women

Year	No Tests	No Positive	% +	Trend
2006	18268	221	1.2%	↓
2007	28435	244	0.85%	↓
2008	46316	337	0.74%	↓
2009	45560	323	0.70%	↓
2010	49062	246	0. 50%	↓
2011				

2011 data is not yet available from the NDOH.

PNG really started serious HIV testing in 2006, so it would be expected that the people to test were more likely to be HIV+ as people were eager to access testing and health staff were encouraging people who had symptoms, to have a test. Every year, the % of people testing HIV+ has dropped as a proportion to the number of people being tested. So we are doing many more tests each year, but finding similar numbers of HIV+. But, this is not the true picture. How do we find out the truth about our epidemic in PNG without an IBBS? Well, there are computer models that have been developed using the available data to come up with what the epidemic has most likely 'done' and what it is most likely to do if things stay the same (ART, Condoms, Testing, Care, Treatment)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PNG (National)	0.28	0.39	0.5	0.61	0.7	0.75	0.77	0.78	0.78	0.79	0.79	0.79	0.79	0.79	0.78	0.78
Highlands (Region)	0.25	0.42	0.62	0.81	0.94	1.01	1.02	1.01	0.98	0.96	0.94	0.91	0.89	0.88	0.87	0.86
Southern (Region)	0.43	0.54	0.65	0.75	0.83	0.88	0.9	0.91	0.9	0.9	0.9	0.89	0.88	0.87	0.86	0.85
MOMASE (Region)	0.24	0.28	0.32	0.35	0.39	0.43	0.47	0.51	0.55	0.58	0.62	0.64	0.66	0.68	0.69	0.7
NGI (Region)	0.25	0.28	0.31	0.34	0.38	0.41	0.44	0.47	0.49	0.52	0.55	0.56	0.58	0.59	0.59	0.6

GAR 2012, NACS PNG. Page 25. *Figure 2 - Trends and projection of HIV prevalence (per cent) in 15 - 49 years old adults across PNG and the four regions from year 2000 to 2015*.

So if we look at 2012, we can see as a country we are close to 0.8%, with some variation in the regions. This still does not show us "who" or the characteristics of the people who are testing positive – for this, we need an IBBS or other bio-behavioural surveillance to work it out (more of this later). However, using the UNAIDS guidelines, we can say from the current evidence PNG is in a Concentrated Epidemic and is predicted to remain so up till 2020. We are below 1% HIV Prevalence in the general population.

Now that we know (from the evidence we have available to us at this point) that we are dealing with a Concentrated Epidemic, we need to understand the types of activities that are contributing to this concentrated epidemic. We can look globally first, and learn who the KAP are in other parts of the world.

Key Affected Populations Globally

- Women who sell sex (street or brothel based)
- Trans-sexuals (born male who are now female)
- Truck Drivers, Sailors, Port Workers
- Hospitality workers (hotels, bars, guesthouses)
- Migrant Labour / Migrant Workforce
- Uniformed services (soldiers, police, security)
- Injecting Drug Users
- Male Prisoners (anal sex + needles + cutting)
- Men who have sex with other men

The reasons that these populations or groups are more vulnerable to HIV, or more likely to become infected with HIV when compared to other people is because each of these populations have both **biological** and **social** reasons for their increased risk or increased vulnerability to HIV infection. However, the basic reason is, each of these people are more likely to have more sexual partners than other people due to their work situation, their mobility or restriction (sailors : prisoners), the people they meet (population mixing) and the opportunity to have sex. The more people you have sex with, the greater the chance of meeting and having sex with someone who also has sex with other people and may well have an STI including HIV.

Social and Biological Characteristics which Increase Vulnerability to HIV

1. Economics (either Rich or Poor or Namel)
    a. In early HIV epidemics, it is the rich who are infected first because they have money to travel, buy sex, and buy things that also help get sex.
    b. As epidemics progress, it is the poor who become the KAP because of reduced access to health services and a reduced ability to protect themselves.
2. Access & Ability to have multiple sexual partners (either casual or regular). This is the defining characteristic of KAP – multiple sexual liaisons.
3. More likely to use alcohol and drugs to the point of intoxication / spak.
4. More likely to have reduced access to health services (due to their own beliefs, or stigma and judgement from health staff).
5. May be involved in illegal activity and suffer police harassment (sex, drugs, already in prison).
6. May be alienated from family (e.g. sex worker).
7. More likely to have an STI due to meeting and having sex with other people who have an STI (i.e., all these other characteristics.
8. May be living distant from family and social support (e.g. migrant worker).
9. The socially marginalised KAP more likely to be victims of violence (sex worker, homosexual)
10. People who like a variety of sexual partners, are sexually adventuress.

11. People who believe they have nothing left to lose (sense of hopelessness).

Key Affected Populations in PNG – Same or Different?

In PNG do we have people with the following characteristics or activities?

- Multiple Concurrent Sexual Partners?
- Mobility & Population Mixing?
- Travelling away from home for work?
- Demand for & Supply of sex for sale ?
- Anal sex? Both hetero & homo?
- High rate of other Sexually Transmitted Infections & Genital conditions?
- People who have HIV?

The answer to each of these questions is "yes" if we look at all the studies that have been done during the past 5yrs by the IMR, NRI, and FHI. But we can also look at the specifics of these studies just to check.

Anal Sex – Heterosexual (women with men) and Homosexual (men with men). We are discussing this topic first, because it is a very important sexological issue which is not talked about due to stigma and some community gate keepers believing it does not happen; but we are also talking about it because of all sexual activities, it is the highest risk for HIV transmission if condoms are not used.

- 27.5% of meri and 15.9% of men had anal sex in the previous year [2008 Lae STI Clinic IBSS].
- 4.3% of meri & 7.2% of men used a condom with last anal sex [2008 Lae STI Clinic IBSS].
- 57% of meri had anal sex with a customer in previous month [2011 BSS Port Moresby].
- 54% of MSM had anal sex with a woman in previous month [2011 BSS Port Moresby].
- 85% of Mt Hagen meri sex workers had anal intercourse with male customers; 53% used a condom last time [NRI BSS FSW 2011].
- 39.8% of rural plantation meri had anal sex; 4.5% used a condom last time [NRI BSS WRC 2010].
- 48% of women had anal intercourse with casual (non paying) men and 57% had anal sex with their regular (non paying) partner [IMR BSS 2010].
- 14.8% Truck Drivers had anal sex with women and 48.6% of these used a condom the last time they had anal sex [BSS NRI Truckers 2010]
- 40-45% of MSM intercourse acts were with condoms (both male & female partners). [2011 BSS Port Moresby]

Transactional Sex (see all the BSS completed between 2006-2011)

- Both men and women receive and give gifts (exchange / transaction) in return for sex.
- Meri who sell sex for income, may pay for sex with someone they are erotically interested in.
- Men who sell sex to men may also pay for sex with women.

- Geli geli who receive money from men for sex, may pay for sex with more attractive men.

None of this would matter if these activities did not actually result in HIV Transmission. Now we can look at the evidence that suggests that indeed these activities are meaningful and serious, as they do result in HIV Transmission.

HIV in Women Exchanging Sex

- 11.8% [2010 Meta-Analysis from UNSW]. This is a published analysis of all the recent studies of prevalence in sex workers in PNG and they calculated that 11.8% of women exchanging sex in PNG would be HIV+.
- 19% [2010 IMR BSS in POM]. This study tested its participants and found that of the women exchanging sex in Port Moresby, 19% were HIV+.
- 33% experienced STI symptoms past year [FHI BSS POM 2010]. The FHI study was not bio-behavioural, so no testing was performed; – a third of the participants reported STI symptoms during the past year
- 8-27% estimated [FHI BSS POM 2010]. This is an estimation and note the wide range of potential.
- All PNG studies point to a >5% HIV Prevalence in this KAP, meaning PNG fits the criteria for concentrated epidemic pattern.

HIV in Transgenders and men having sex with other men

Transgendered women (biological men who are now women) globally have a higher HIV prevalence than do gay men, homosexual men and bisexual men. It would seem that PNG also has high HIV prevalence in this KAP. This is due to a mix of biological and social vulnerability (including rape, anal receptive sex, violence, injection drug use)

- 23.7% Transgender [2010 IMR Study in PoM]
- 9-40% for MSM estimated [FHI BSS POM 2010].
- 40% MSM experienced STI symptoms past year [FHI BSS POM 2010)].
- 8.8% men who sell sex [2010 IMR Study in PoM] (36% of this sample were heterosexual) This study was with people who sell sex, and the men were disaggregated from the transgenders, but not their sexual orientation/preference. So some of these men were only selling sex to women, where as others were selling sex to both men and women.
- All PNG studies point to >5% HIV Prevalence in this KAP, mostly due to anal intercourse without a condom.

Men and Transactional Sex

- 23% of OSL male employees paid for sex in the past year, with 75% of these using a condom the last time they had paid sex, while 51.2% reported that they always use condoms with paid sex [2009 NRI BSS Oil Search]
- 38.3% of truck drivers had paid for sex past year (free ride, alcohol, food, or money) [2010 NRI BSS Truck Drivers].
- 16% of plantation worker men had paid for sex last 12 months. Interesting, of the total sample, 40% said they had not had any sex at all during the previous year. So of those who said they had sex during the past year, 24.2% had paid for sex. (NRI BSS 2010 Jiwaka Plantation Workers)

- 19% of these men had >5 paid partners past year. (NRI BSS 2010 Jiwaka Plantation Workers)
- 21% always used a condom with paid partners past 3 months (NRI BSS 2010 Jiwaka Plantation Workers)

Men and STI Symptoms

Without bio-behavioural data, we can use STI symptoms as a proxy measure of HIV risk. The IBBS will give us more accurate data – because many more men will experience an STI as compared to HIV.

- 19.1% of OSL workers reported an STI symptom during the past year [2009 NRI BSS Oil Search].
- 13.6% of male truck drivers had an STI symptom during the past year [BSS NRI 2010 Truck Drivers].
- 53% of male plantation workers reported an STI symptom past year. Remember, these are the same men where 40% said that they had not had sex in the past year[NRI BSS 2010 Jiwaka Plantation Workers].

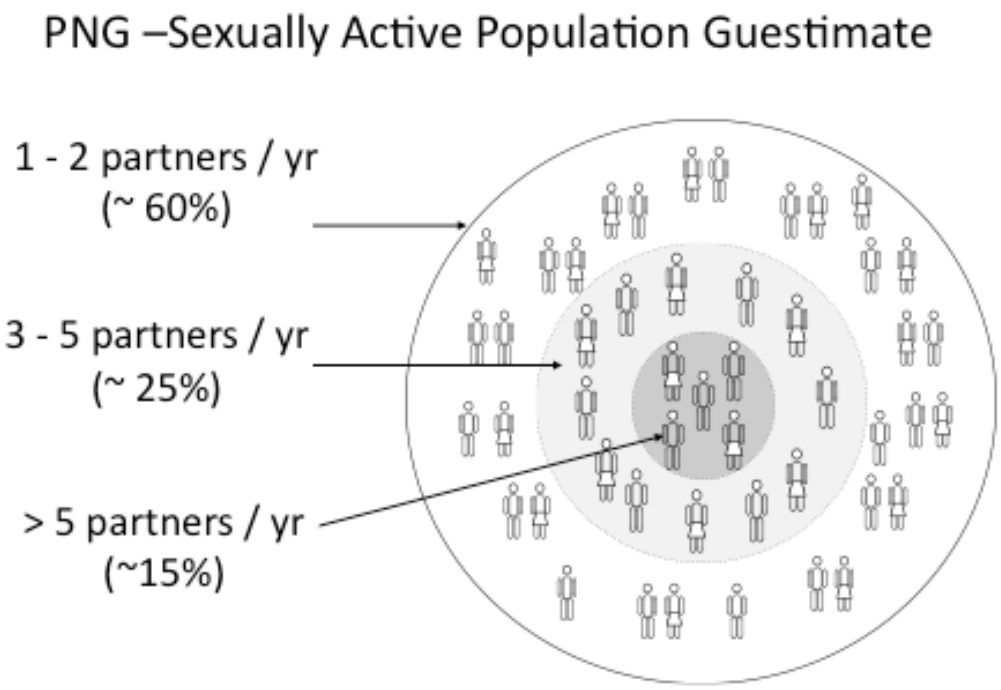
Men and non-Regular Sexual Partnering

- 40.4% of OSL workers reported one or more non-regular partner during the previous year.
- 60% of these had 1 or 2; 22% had 3 or 4; and 16% of these had more than 5[2009 NRI BSS Oil Search].
- 29.6% of male plantation workers had non-regular partners last year [NRI BSS 2010 Jiwaka Plantation Workers]
- 12.5% of male plantation workers had >5 non regular partners last year [NRI BSS 2010 Jiwaka Plantation Workers].
- 30.1% of these with non regular partners used a condom at last sex [NRI BSS 2010 Jiwaka Plantation Workers].
- 48.1% of truck drivers had >1 partner past year [2010 NRI BSS Truck Drivers].
- 20.6% of truck drivers had >5 partners past year [2010 NRI BSS Truck Drivers]

All this does point to a significant minority of people engaging in multiple sexual partnering with inconsistent condom use.

" … Repositioning condom use at the center of HIV prevention is justified".

Marie Laga & Peter Piot. AIDS 2012, Volume 6 No.10



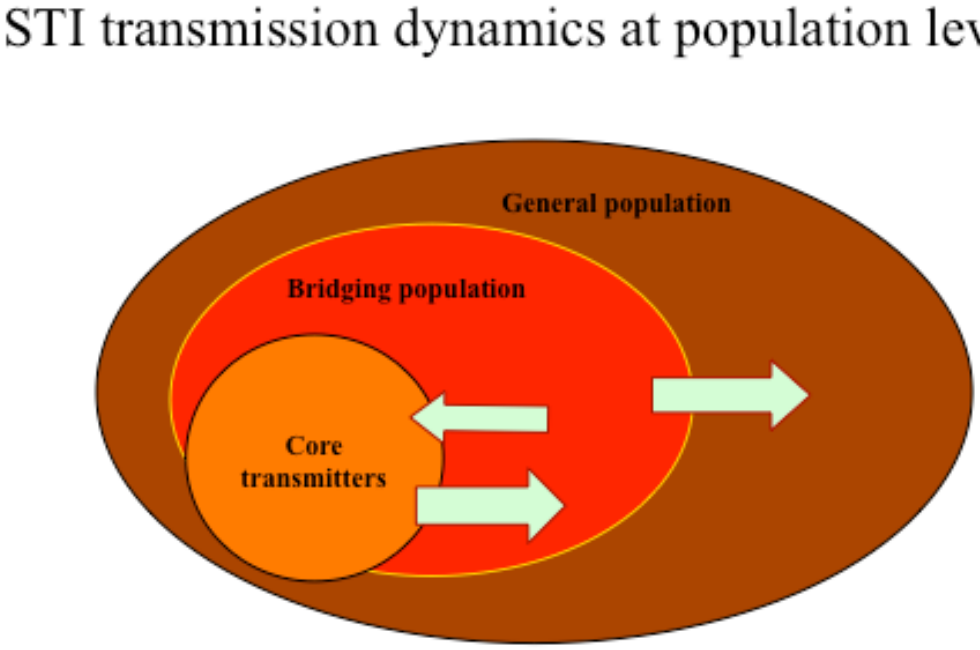


Figure 2: **Sexually transmitted infection transmission dynamics at the population level**[15]
Arrows show direction of sexual contact between core groups, bridging populations, and general population.

Nicola Low, Nathalie Broutet, Yaw Adu-Sarkodie, Pelham Barton, Mazeda Hossain, Sarah Hawkes 2006. Sexual and Reproductive Health 5: Global control of sexually transmitted infections, *The Lancet* DOI:10.1016/S0140-6736(06)69482-8.

In PNG we do not have sufficient information on the numbers of people engaged in the types of behaviour that we know puts them at an increased chance of STI and HIV. Understanding the numbers will help us work out where to focus our efforts. The IBBS will give us a much better understanding, but what we can do now is look at all the behavioural data we have from the IMR and NRI behavioural surveillance surveys (BSS) and look at the proportion of the respondents who disclose their numbers of partners. These are very much 'guesstimates', and are thus only a guide as to what we may be dealing with until we have the results from the IBBS. PNG may well be very different from other countries, with a much higher proportion of the population engaging in multiple sexual partnerships – perhaps up to 40%. The take home message with this is, that we can focus on those who are having the most number of partners, (inner two rings) because they are the KAP, and if we can reduce the amount of unsafe sex happening there, we will have a much greater impact than if we focus on the 'general population' (the outer ring) who may not be at low or minimal risk.

Introduction to evidence based programming

"Finding the right balance between top–down essential prevention packages versus bottom–up community-owned context-specific processes is inherently a challenge, but both approaches are needed and should now meet each other."

Marie Laga & Peter Piot. AIDS 2012, Volume 6 No.10 page 1226. Tingim Laip is uniquely positioned to answer both these challenges. We are bottom up because we are community based, yet we are also top down as we have an evidence base and we know what sort of interventions work from a scientific public health and policy perspective (ie Condom Promotion & Access, HIV Treatment, STI Control). We also need to clarify what 'Community' is and what it means in the context of the type of HIV Epidemic we are dealing with.

- For a generalised epidemic; 'community' refers to a geographic population or place (village, town, suburb).

- For a concentrated epidemic; 'community' refers to the people who are most at risk (population defined by activities, not place).

TL is community based, so we need to define for ourselves what this now means in light of a concentrated epidemic and our needs to respond to KAP. Our site committees have historically been geographically based in communities – places as compared to populations. TL2 with its focus on KAP must now work with populations as compared to places. Populations move between places, which means we need to be flexible & follow the populations.

"HIV prevention is neither simple nor simplistic. We must achieve radical behavioural changes — both between individuals and across large groups of at-risk people — to reduce incidence. Once achieved, it is essential that such changes are sustained" [Thomas J Coates, Linda Richter, Carlos Caceres. HIV Prevention 3: Behavioural strategies to reduce HIV transmission: how to make them work better. *The Lancet* 2008; 372: 669–684].

Now that we know we have KAP and a sexually driven epidemic, it is useful to explore the motivations for sex, so that we can address these in our interventions. UNAIDS suggests 'driver' not be used in the context of the HIV epidemic due to confusion and misunderstandings of the word, which is often mis-used to describe the structural or social forces that influence behaviour or the environment in which health seeking and sexual behaviours occur. But sex remains the real risk in PNG for HIV transmission. Here are some factors that influence and motivate for sexual behaviour that may put a person at risk.

- Alcohol and marijuana are factors that increase the likelihood of finding sex.
- Money, employment, travel and mobility are also factors that increase the chances of finding opportunities to have sex with a variety of people.
- Because the motivations to have sex vary across the KAP, we need to target our messages and our interventions to each KAP.
- Pleasure and Orgasm are one motivation
- Money, goods and services
- Access to free alcohol
- Peer bonding, Social interaction, Security
- Normative behaviour in varying % of populations globally (see above diagram of proportions of people who engage in multiple sexual partnering during a given year).
- Boredom, Loneliness, Sexual Desire.
- It is what men and women with money through-out history have done.
- Fun, pleasure, satisfaction, self esteem, mental health, excitement, variety
- Increase reproductive potential (But STI can muck this up by causing infertility in Meri)
- Poor primary relationship (no emotional or sexual satisfaction)

Locally Identified KAP

In order to make an informed decision on how to transition from a general population HIV awareness model to a key affected population HIV intervention model, we first need to know which people are most affected by HIV now and which people are most likely to be affected by HIV in the coming year. To describe this in another way, we could say, we need to find the people who already have HIV and find out what sort of sexual activities they engaged in and how they came to have HIV, so that we can then understand what activities are most associated with HIV transmission so that we can provide prevention interventions with the people most at risk of new HIV infection – it is these people we call the key affected populations. (UNAIDS, June 2012. Combination Prevention 30th Meeting of the UNAIDS Programme Coordinating Board).

KAP can be slightly different populations in each area, or specifically, there will be the KAP to be found in every part of the country, but the biggest numbers of each KAP are found in

more places than others. For example, in Hagen town we may see that it is women who are selling sex in the porn video hauses, in Madang it might be gay men who have receptive anal sex, in Vanimo it might be women selling anal sex to men who inject drugs, in NCD it might be young women working in the bar at nightclubs who sell sex to land owners, in Goroka it might be men on their way to work or on their way home from work, it might be truck drivers, it might be PMV drivers at Zero Bar, in Popondetta it might be women in town on small holders pay day, etc. But we need to know who the next 1000 people in PNG to catch HIV will be, so that we reach them first before HIV does. This means, we need to really focus on those people in our area who are most likely to catch HIV this year. Who do you think this will be by looking at the evidence of who is getting HIV and who is doing the behaviours associated with getting HIV. The women who are having more than one sexual partner (whether paid or not) and who are the men who are having more than one sexual partner (whether male or female or paid or not).

We need to know the following information:
Firstly, we need to know the sexual activities of those people who have already tested HIV positive and Secondly, the types of sexual activities that occur in your area that have been shown to transmit HIV. So what we are doing, is our own version of a bio-behavioural assessment or a mini HIV mapping. We look at the HIV testing that is being performed in our area and we look at the social HIV or KAP mapping that has been completed and we compare them to see if they agree with each other. For example, if the social mapping showed "drug bodies" to be at high risk of HIV because of social marginalisation, but no drug bodies have been found to be HIV+ yet, we will need to ask some questions – perhaps none of the drug bodies have been tested? (for example) or perhaps the drug bodies are not getting much sex, or if they are getting sex, maybe they are using condoms? So for this example, we may not focus on drug bodies, but we would still continue to ensure they had condoms by regular distribution, so that they could continue using them. So now we can actually start our exploration of HIV in our area.

What particular sexual activities in your area have been found to transmit HIV as evidenced by the available testing data from the HIV Testing sites in your area? You will need to meet and talk with the Provincial Disease Control Officer, the Provincial Health Data Manager and the Provincial AIDS Committee. You could also interview the people conducting the testing to find out what they think was the way of transmission – in many respects this may be more possible. You can record the data from more than one testing site, if you have several health facilities that are conducting HIV testing in your area, or you can use the Provincial level data as a proxy measure if your own HIV testing sites are not able to give you accurate numbers.

From all our social mapping plus the various BSS reports, we can make an accurate statement as to who the local KAP may be in your area.

Women with Multiple Sexual Partnering

- Women Selling Sex
- Women with multiple sexual partners for sexual fun
- Women wanting access to free alcohol and a fun night out.
- Women looking for a rich husband

- Mobile women with money - traders (looking for young sexy men for fun)

Men with Multiple Sexual Partnering

- Buai traders, buyers, middle men, drivers
- Security Guards
- Employed unmarried men on pay days
- Some married men on pay days
- Some MMSP have sex with women and men
- Target these men by incorporating safe anal sex messages into all safe sex messages for men

Biological Men who have sex with other Men, Males, or Transgenders

- Men who engage in receptive anal intercourse
- May identify as 'Gay" or are 'homosexual in orientation'
- May identify as trans-gender
- Easier to reach and target through 'Kapul Champions' +/- peer outreach.
- Other MSM whose sexual identity is not 'homosexual' can be reached as per previous slide.

These broad groups may vary slightly from place to place. It is important to re-visit your list of KAP to ensure that it remains accurate – these populations do change with the social and economic environment – which is dynamic. Suggest you undertake this mini-mapping process every 6 months.

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