

# Reproduction, reproductive health and STD: the unholy trinity for the Pacific

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## Introduction

Human reproduction is one of those pleasurable but most misunderstood processes in the Pacific. Reproductive health, sex, coitus, reproduction and genitalia have been surrounded with myths, taboo and mystery that there is difficulty in understanding the facts. There is too much focus on sex and coitus neglecting other stages in the process of human reproduction e.g. parenting, caring for children and effects on the family. Sexually transmitted diseases (STD) are a few of the factors contributing to problems with reproduction but these have not entirely been due to people's sexual efforts to reproduce. The problem is from people having sex or copulating carelessly with or without intending to reproduce and STD being mystified together with sex organs. These jeopardise reproductive health.

With careless coitus or copulation comes reproductive problems like unwanted pregnancy, STD, abortion, and their consequences e.g. infertility, cancer, pain and death. This paper discusses the effect of STD on reproduction. It addresses the spectrum of issues related to sexual activities, reproduction and lifestyle in general.

These issues lead to STD and subsequently reproductive problems. The reproductive problems may lead to poor quality children, sickly parents and disrupted families which become non-productive and dependent. The latter situations threaten the future of families and societies in the Pacific. The intention is that this article be a useful introduction for health and non-health worker into this value laden and sensitive area of Pacificness

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## Reproductive health

Reproductive health is a state of well-being or absence of disease related to the production of children and welfare of the organs of the body directly involved with coitus, conception, pregnancy and delivery of babies. This involves attitudes to sex, sexuality, genitalia and children. The physical and social environments for the maintenance of reproductive health is unique for groups of people. Therefore physical and social changes affect not only reproductive health but also the processes involved in reproduction. The reproductive health status of the mother and father determines the kind of foetus and child they will produce. The physical processes leading to fertilization may change but the needs of children will remain as urgent and essential as it has been through the ages.

Reproduction is the process necessary for producing children. This involves both social preparation (e.g. courting, marriage, home formation, etc.) and physical acts (e.g. coitus, acquiring shelter, economic security, etc.). Reproduction consists of a series of activities aimed at producing, caring and raising children, and maintaining a social and physical environment appropriate to the heritage of a group of

people or society. Reproduction is essential for the continuity of genetic, cultural and economic heritage of a community. One must keep cloning and artificial fertilization in the perspective of these social and economic contexts necessary for reproduction.

The process of reproduction is enhanced by healthy families, that can meet their basic needs with resources to spare for new members. Without resources for new members, initiation of the process of reproduction is unwarranted. Therefore, reproduction is only for those with resources to invest on new additions to the family. These resources include time, aptitude, love, knowledge and wealth. The amount of resources needed depends on the aspiration and environment of each community. Usually the value of children is a major determinant of the resources needed. Failing the possession of these sufficient resources,

people should just have sex carefully and not reproduce. Adoption can be an alternative. However, it is necessary to focus on the family unit to maintain reproductive health and to reproduce appropriately for the continuity of the Pacific as we know it .

## Sexually transmitted diseases

These are not diseases of reproduction but diseases due to sexual contact, coitus, copulating and/or coupling. These diseases are either solely or predominantly transferred from one person to another sexually. They may have a predilection to genital or perigenital areas but can affect the whole body. It is possible for STD to be transmitted through routes other than the sex organs. e.g. blood transfusion. Table 1 shows the different categories of STD. The causal agents include viruses, bacteria, yeast, fungus, protozoa, and lice. Transmission occurs during coitus and coupling because of the very close body contact. The closeness during the sex act, pregnancy and child rearing enhance the spread of all infectious diseases not just STD. Table 2 summarises the general symptoms of STD.

STD are also known as venereal diseases (VD). The latter was derived from Venus, the Greek goddess of love. The close linkage of sex and love led to the naming of the area around the labia majora of the vagina, Mons Veneris or the Mountain of Venus. The important question for the Pacific now is whether this close association of love and sexual activity still exists. Has sex become more for recreation or a job? With increasing STD or VD there has been an association with sexual permissiveness, promiscuity, prostitution and homosexuality, and a decreased fear of STD. This relationship may indicate a dissociation of sexual activities from love and reproduction.

In terms of STD there needs to be a revision of attitude due to HIV infection and AIDS. HIV is the newest and most drastic STD of our time. It has no cure or vaccine. HIV infection leads to a definite early death, affecting the most productive and reproductive portion of society. Any treatments available are only pallia-

tive and very expensive, thus making prevention the only and best option. The HIV infection and other STD share common features for transmission and prevention. Therefore, the prevention of HIV will decrease the incidence of other STD and vice versa. Table 3 shows the latest available data from the South Pacific Commission on AIDS and STD in the Pacific countries.

**Table 1. Different types of sexually transmitted diseases (STD)**

<b>Historically defined venereal diseases</b>
Syphilis acquired, congenital (annual world-wide incidence is estimated at 50 million people with 40000 in the United States)
Gonorrhoea (annual world-wide incidence is estimated at 250 million people with 3 million in the United States)
Chancroid
Lymphogranuloma venereum
Granulom inguinale
<b>Newly defined STD</b>
Hepatitis B
Genital and anorectal herpes
Balanoposthitis, balanitis
Proctitis
Genital warts
Genital candidiasis
Nonspecific sexually transmitted infection (e.g nonspecific urethritis)
Chlamydia infection
HIV/AIDS
<b>Enteric diseases that may be sexually transmitted</b>
Salmonellosis
Amoebiasis
Typhoid
Giardiasis
Shigellosis
<b>Disease spread by body contact but not necessarily by coitus</b>
Pediculosis (hair lice)
Molluscum contagiosum
Scabies

STD and HIV infection share the same risk factors. In addition, STD and HIV infection interacts synergistically leading to: STD facilitating the transmission of HIV infection; HIV altering the natural history, diagnosis and susceptibility to treatment of STD; and STD influencing the natural history of HIV infection.

Both ulcerative and non-ulcerative STD facilitate HIV transmission. The synergistic interaction between STD and HIV infection may severely aggravate the existing epidemics. This warrants the priority allocation of resources to STD control programmes to not only reduce the STD burden but to slow down the spread of HIV. This strategy is essential for the current status of the Pacific where STD burden exceeds HIV infections (see Table 3).

## Effects of STD on reproduction and reproductive health

The effects of STD on reproduction are multiple, affecting the personal health of family members as well as the social conditions necessary for the raising of children. The quantifying of these effects is not possible with the current status of national health information systems in the Pacific. Qualitatively, the effects on reproduction may be viewed as follows:

**Effects on the mother and father:** The three commonest symptoms of STD are urethral discharge, vaginal discharge and genital ulcers. These lead to problems varying from foul smell, staining of clothes to pain. The effects of these symptoms on reproduction stems from sexual abstinence due to shame or discomfort. Infections of the pelvis due to STD leads to infertility. General effects of STD include arthritis, dermati-

**Table 2. General symptoms of STD including AIDS**

In Females	In Males
<p><b>Sores</b></p> <p>Painless sores in or near the vagina or anywhere else on your body may be a sign of syphilis. Painful sores and blisters around the genitals may be a sign of herpes.</p>	<p>Painless sores around the penis or elsewhere may be a sign of syphilis. Painful sores near the penis or anus may be a sign of herpes.</p>
<p><b>Discharge</b></p> <p>Some vaginal discharge is normal but an irritating, itching discharge that is yellowish or white should be checked. A discharge from the anus should always be checked</p>	<p>A clear or white "drip" from the penis or anus should be checked. It could be gonorrhoea or another kind of infection</p>
<p><b>Burning urination</b></p> <p>If urinating hurts or burns, that may be a sign of an STD. If you feel you have to urinate very often (like two or three times in one hour), that should be checked. These signs may mean a bladder infection or STD</p>	<p>Same as for females. When this is coupled with a discharge from the penis, it usually means gonorrhoea or another kind of infection in the urethra</p>
<p><b>Sore throat</b></p> <p>People get sore throats for lots of reasons, but if you had oral sex, your sore throat could be a sign of gonorrhoea</p>	<p>Same as for females</p>
<p><b>Itching</b></p> <p>Itching in the vaginal opening area can be a sign of an infection. Itching anywhere that doesn't go away could be a sign of an STD bug or lice especially in pubic or body hair</p>	<p>Itching in the area around the penis opening or anus can be a sign of infection. Itching in pubic, body or face hair can mean STD, bugs or lice</p>
<p><b>Rashes</b></p> <p>A rash can be a sign of an STD, especially on the soles of the feet or the palms of the hands. Have it checked</p>	<p>Same as for females.</p>
<p><b>Warts</b></p> <p>These or other bumps and lumps around the genitalia should be checked.</p>	<p>Same as for females</p>
<p><b>Lower abdominal pain</b></p> <p>This may be a symptom of an infection that has travelled from the genitals to the womb or tubes. Have it checked right away. If there is possibility that you're pregnant, see a health worker immediately</p>	<p><b>Pain in the groin</b></p> <p>This may be a symptom of gonorrhoea or another infection that is spreading. Have it checked right away.</p>
<p><b>General early symptoms of AIDS for males and females</b></p>	
<p>Fever Fatigue Fungus infections Cough</p>	<p>Swollen glands Skin blotches or rashes Weight loss</p>

tis, meningitis, cancer, endocarditis and valvular heart diseases. Different causal agents of the different types of STD have a predilection to produce various groups of disease, e.g. syphilis may lead to genital warts, aortic aneurysm, heart disease and neurologic disorder. Table 4 summarises the effects of STD on the mother, foetus and the newborn. All diseases affect the health and productivity of parents due to physical and emotional incapacity. Social upheaval and family breakdown may result, from social stigma, physical incapacity (including death) and economic burden due to the medical costs, especially the very expensive treatments

used for AIDS.

Pelvic inflammatory disease (PID) resulting from STD, is the most common gynaecological indication for admission in many developing countries. PID contributes to infertility, ectopic pregnancy, chronic abdominal pain, and maternal mortality. Miscarriage, stillbirth, congenital syphilis occurs in about 3% of women who tested positive for syphilis. STD has also been implicated in the aetiology of cervical cancer. All these consequences of STD effect families socially, mentally and economically.

**Table 3. HIV infection, AIDS, gonorrhoea and NSU: situation update in the Pacific Islands Countries, as at 1st June 1995**

Countries	Gonorrhoea/NSU for 1994		HIV infection** cumulative incidence		AIDS cumulative incidence	
	No. reported cases	Incidence rate/10,000*	No. reported cases	Rate per 100 000+	No. reported cases	Rate per 100 000+
American Samoa	40	7	0	0.0	0	0.0
Cook Islands	14	7	0	0.0	0	0.0
Fiji	1040	13	21	2.7	7	0.9
French Polynesia	132	6	144	66.0	43	19.7
Federated States of Micronesia	234	22	2	1.9	2	1.9
Guam	118	8	64	43.6	24	16.4
Kiribati	58	7	2	2.5	0	0.0
Marshall Islands	64	12	8	14.6	6	11.0
Nauru	...		0	0.0	0	0.0
New Caledonia	170	9	123	67.5	43	23.6
Niue	0	0	0	0.0	0	0.0
Northern Mariana Islands	49	9	10	17.7	6	10.6
Palau	80	48	1	6.1	1	6.1
Papua New Guinea	...	...	236	6.0	87	2.2
Pitcairn Island	0	0	0	0.0	0	0.0
Solomon Islands	936	25	0	0.0	0	0.0
Tokelau	0	0	0	0.0	0	0.0
Tonga	55	6	6	6.1	5	5.1
Tuvalu	3	3	0	0.0	0	0.0
Vanuatu	299+	18	0	0.0	0	0.0
Wallis and Futuna	1	1	1	6.9	1	6.9
Western Samoa	222	14	1	0.6	1	0.6

*Data not available*  
 \* Based on 1994 mid-year population estimates  
 + Data received until June 1994 only.  
 \*\* AIDS cases included  
 + Based on 1994 mid-year population estimates

Source : SPEHIS/PIASPP & Population programme, South Pacific Commission

**Effects on the foetus and the newborn:** The product of reproduction is affected by the social, physical and psychological status of the mother and father. The infections of the father may be transmitted directly to children or through the mother to the foetus. Table 4 provides an extensive list of STD, and their effects on the mother, foetus and the

newborn. In summary, STD of the mother can lead to abortion, eye infection, heart problems, and STD of the newborn. An important example is HIV infection from the father can be passed to the mother who in turn passes it to the baby leading to the whole three suffering and dying from AIDS. For the offspring it may mean poor health, mental

**Table 4. Maternal STD infections: effects on pregnancy and foetus or newborn**

Infection	Maternal effects	Foetal or neonatal effects	Counselling: prevention, identification, and management
<i>Chlamydia trachomatis</i> (intracellular bacterium)	Mild infection usually Cervix asymptomatic, or congestion, edema, mucopurulent discharge may be asymptomatic, symptoms similar to gonorrhoea discharge and bleeding from or an infection of the cervix Lymphogranuloma venereum, Urethritis, Acute salpingitis, conjunctivitis, sore throat	Stillbirth and neonatal death 10 times more common than in non infected women, preterm birth. Newborn: asymptomatic, or pneumonia; conjunctivitis appearance after 3 to 4 days; chronic follicular conjunctivitis (with conjunctival scarring and corneal neovascularization)	STD. three times more common than gonorrhoea, high incidence in teen-age girls, usually controlled with antibiotics, but not by penicillin, erythromycin is the drug of choice; untreated, can lead to pelvic inflammatory disease (PID) with painful infection of fallopian tubes, in men it is linked to nongonococcal urethritis (NGU), newborn may acquire disease by direct contact with infected birth canal; transmitted through sexual contact(?), and genitals-to-hand-to-eye contact (oculogenital).
<i>Cytomegalovirus</i> (CMV) (a herpes virus)	Respiratory or sexually transmitted asymptomatic illness or mononucleosis - like syndrome; may have a cervical discharge	Foetal or neonatal death or severe, generalized disease - hemolytic anemia and jaundice, hydrocephaly or microcephaly, pneumonitis; hepatosplenomegaly	Virus may be reactivated and cause disease in utero or during delivery in subsequent pregnancies; foetal infection may occur during passage through infected birth canal, disease is frequently progressive through infancy and childhood.
<i>Gardnerella</i> (hemophilus vaginalis vaginitis)	Low virulence, mild illness	Chorioamionitis; septicemia; foetal or neonatal death	Counsel regarding transmission through sexual contact especially when estrogen levels are high. Often occurs along with other infections of vagina. Because therapy is often a sulpha-based medication (suppository, cream, etc.) assess for sensitivity to sulfanamide.
<i>Gonorrhoea</i> ("clap, drip") <i>Neisseria gonorrhoeae</i> (gonococcus bacterium) Genitourinary, Anorectal Oropharyngeal Systemic	Lower urogenital tract (early stage) dysuria, frequency, heavy purulent vaginal discharge; cervical tenderness; vulvovaginitis; Bartholinitis Upper urogenital tract (later stage) (10%-15% of cases). lower abdominal pain, cervical tenderness; fever, nausea, vomiting, adnexal abscess, tenderness (PID); ectopic pregnancy, chronic pelvic pain Anorectal inflammation, burning, pruritis Oropharyngeal asymptomatic or inflammation, sore throat Systemic gonococemia, skin rashes, arthritis, pericarditis, meningitis	Gonococcal ophthalmia neonatorum, pneumonia; neonatal sepsis with temperature instability, hypotonia, poor feeding and jaundice	Transmitted by sexual contact Both (all) partners treated to prevent reinfection, couple should use condoms and avoid orogenital sex until post treatment cultures are negative at two consecutive follow-up visits Incubation period. 2-5 days, in females, early stage may be asymptomatic 5% of clients also have syphilis Gravid women allergic to penicillin can be given erythromycin or spectinomycin; nongravid clients can be given he cephalosporins and kanamycin. During postnatal period, infection may reappear as gonococcal endometritis.
<i>Herpes genitalis</i> (herpes simplex virus; HSVII)	Symptomatology more pronounced with first infection; painful blisters that rupture, leaving shallow ulcers that crust over and disappear after 2-6 wk; vaginal discharge if cervix or vaginal mucosa involved; fever, malaise, anorexia, painful inguinal lymph-adenopathy Ascending infection of foetus occurs from lesions in birth canal after rupture of foetal membranes, therefore abdominal delivery is indicated before rupture of membranes	Abortion; premature birth Transplacental infection (rare): microcephaly, mental retardation, retinal dysplasia, patent ductus arteriosus; intracranial calcification with intranatal infection; symptoms appear in 4-7 days. lethargy, poor feeding; jaundice, bleeding; pneumonia; convulsions, opisthotonus, bulging fontanelle, skin, mouth lesions. Neonatal infection with disseminated disease results in 82% mortality, survivors suffer central nervous system or ocular sequelae and face recurrence in first 5 yr of life	If cervical lesions are acquired, infection initiates chain of events that leads to invasive carcinoma in middle age (cervical cells are more vulnerable just after puberty, when they change from columnar to squamous); age 17 yr, frequency of intercourse, and number of different partners are factors Transmitted primarily by sexual contact but also possibly by fomites. Incubation period. 2-4 wk Remains in body cells indefinitely, therefore infection recurs throughout lifetime triggered by infection, fever, menstruation, emotional upset; lies dormant in sensory nerve ganglia; more severe during pregnancy. Drug therapy acyclovir (Zovirax is approved for treatment of HSV) Researchers are seeking a herpes vaccine-glycoprotein D is under investigation.

Table 4 continued on next page

**Table 4 (cont)inued). Maternal STD infections: effects on pregnancy and foetus or newborn**

Infection	Maternal effects	Foetal or neonatal effects	Counselling: prevention, identification, and management
<i>Serum hepatitis (hepatitis B)</i>	May be transmitted sexually	Infection occurs during birth	Generally passed by contaminated needles, syringes, or blood transfusions; can also be transmitted orally or by coitus, but incubation period is longer; hepatitis B immune globulin can be given prophylactically after exposure.
<i>Syphilis ("lues")</i> <i>Treponema pallidum (spirochete)</i> <i>Chancere</i> <i>Condylomata lata</i> <i>"The great imitator"</i> <i>Cardiovascular disease</i> <i>Neurologic disease</i> <i>Congenital syphilis</i>	Incubation period: several weeks asymptomatic 1) Primary stage: chancre (red base with firm, rolled edges), local lymphadenopathy they clear without treatment in 4-6 wks. 2) Secondary stage: symmetric, non-tender rash anywhere over body, including palms of hands and soles of feet, on scalp, causes loss of hair. Moist papular lesions, condylomata, on any moist skin. Systemic: malaise, fever headache clears without treatment in 2-6 wk. Latent stages: Early: up to 4yr after infection, lesions reappear. Late: for 50-70% lasts a lifetime, no outward evidence of disease 3) Tertiary clinical evidence of disease seen throughout body obligatorative endarteritis leading to cell damage and death and to gumma nodules of dead tissue. The acronym 'paresis' summarizes possible sequelae seen in changes in the following Personality Affect Reflexes Eye function Sensorium Intellect Speech	Syphilis probably continues to be major cause of late abortion through-out the world, despite widespread success of diagnosis and treatment of this disease. Primary and secondary stages of untreated syphilis lead to secondary syphilis (congenital syphilis) in neonate. Congenital syphilis, spirochetes cross placenta after sixteenth to eighteenth week of gestation with the following sequelae: snuffles (rhinitis), rhagades (scars around mouth), hydrocephaly, and corneal opacity, later saddle nose, saber skin, Hutchinson's teeth (notched, tapered canines), and diabetes; not residual foetal-newborn effects if mother is treated adequately before fifth month	Transmitted through sexual contact from infected lesion of one person through intact mucosa or break in skin of other person, into blood and lymphatic systems to all parts of the body within a few hours. Spirochetes are numerous in lesions in primary, secondary, and early latent stages, and in blood during late latent and tertiary stages. If the gravida is treated with penicillin by the fifth month of gestation, congenital syphilis, women with untreated syphilis in labor should receive 3 million units intramuscularly and 2 million units every other day for a total of 7 million units, infant should be treated also. NOTE: Yaws, a non venereal, contagious disease, is caused by the spirochete <i>Treponema pertenue</i> , closely related to the causative organism of syphilis, yaws is spread by contact with secretion or sores from an infected person; both syphilis and yaws give a positive result in the FTS test; yaws is a common disease in equatorial Africa, Hawaii, South America, and the East and West Indies; it is effectively treated with antibiotics, especially penicillin.
<i>Typhoid fever</i>		Intrauterine fetal death; abortion; premature birth	

retardation and a future unproductive life. These affect the use of family and societal resources and the subsequent returns of investments on human capital.

**Effect on families and communities:** The most important immediate effect is shame, stigma and loss of self-esteem of family members and isolation of families by the community. The reaction to STD, HIV infection and AIDS in the Pacific have been largely that of intolerance and discrimination. The attendance of STD clinics and proper management have being hindered by fear of discrimination as much as those arising from a lack of education and rational discussions of sexual partners.

The effects of STD on the economy have recently been demonstrated by AIDS, especially in Africa. There has been a loss of the productive labour force affecting national productivity and leaving behind a dependent population on whom the state must spend resources, e.g. the old and the very young. The loss of productivity and increase of social

welfare spending adversely affect development especially in the frail economies of the developing countries. The Pacific has yet to feel the brunt of HIV/AIDS social and economic deprivation. This the Pacific must guard against, through safe sex, abstinence, and clean blood exchange. Other STD do have similar economic effects on families and communities but to a much less degree than HIV/AIDS.

Another effect of STD, especially HIV/AIDS is on population growth. Death of reproductive age groups and fear of STD will decrease population growth. Increased foetal loss and infant mortality will contribute to a change in population structures. Past experience has shown that improve child survival has decreased fertility. Therefore decrease child survival may increase fertility. It is not known how STD will change population given that they affect fertility, child survival and sexual behaviour. The effects of these on the small Pacific island countries need to be defined and incorporated in national strategies on STD and population control.

**Table 5. Techniques for prevention and control of STD**

<ul style="list-style-type: none"> <li>• <b>Abstinence, masturbation and instrumental manipulation.</b></li> <li>• <b>Sexual contact with one faithful and STD free partner.</b></li> <li>• <b>Other techniques:</b></li> </ul>	
<i>Condom</i>	if used during oral sex, vaginal or anal intercourse, condoms will stop many germs from getting to and from the penis, vagina or mouth. Helps protect from all STD
<i>Contraceptive creams and jellies</i>	Can be used with a diaphragm or cervical cap to help prevent germs from spreading. This may not protect the vagina from attack unless a condom is also used in penis-vagina contact. Creams and jellies can be used in the anus by males and females to give some protection. Remember, these only protect the area they actually cover. Useful mostly for STD other than HIV/AIDS
<i>Contraceptive foam</i>	More effective because it coats more of the vagina. It can be used in the anus during anal intercourse by both males and females. This depends on the types of foam
<i>Foam and condoms used together</i>	Excellent protection against both STD and pregnancy, especially if foam have germicide and virucide properties.
<i>Look yourself and your partner over</i>	Examine yourselves carefully. Check for a bad smell, unusual discharge, rashes, sores, bumps, itching, or redness. All these can be signs of a possible disease. Don't have sex if you or your partner has one of the signs. If you decide to anyway, you are taking a chance. Use foam and condoms. Have yourself checked soon afterwards and face the consequences and protect others.
<i>Urinating before and after sex</i>	This may wash away some germs, but don't count on that alone. If this works it's only for men. Definitely, does not work for HIV/AIDS.
<i>Gargling with hot salt water after oral sex</i>	This may help to kill STD germs in your throat. It must be done right away. Don't count on gargling alone. It may not work. Does not work for HIV/AIDS
<i>Talk to each other</i>	It can be hard to talk about sex, but it's your responsibility to your health and to your partner's health to discuss STD prevention. If you both use something, that makes it easier. Protection is the best prevention but abstinence is ideal
<i>Have regular checkups</i>	As soon as a person starts having sexual contact with others, he or she should have medical checkups at least once a year and, even better, twice a year. If you are having intercourse or oral sex, make sure the doctor or health workers test you for gonorrhoea and syphilis each time you go, and also, but less often, for chlamydia and other STD.
<i>Watch for symptoms</i>	If you notice any signs go to the doctor or clinic immediately and have yourself checked. (See Table 2)

## Prevention of STD

Anyone who is sexually active can get STD. As we now know, some STD (listed on Table 1) can be picked up from blood transfusion, wearing clothes that others wore, unhygienic habits, or just being close to infected people even without sexual contact. Friends and strangers alike can give STD especially if you have sexual contact with them. Does this mean that we avoid all sexual contact? No, that definitely is not the case. It means that we can abstain or have sexual activities but carefully. These are some of the ways:

**Abstinence:** This is having no sexual contact at all with others. This will drastically affect reproduction. Women may still get pregnant through artificial insemination. The use of self-masturbation may satisfy sexual urges. However care must be taken if instruments are used for sexual gratification. Parents may adopt children, as was the common practice in traditional Pacific societies, to satisfy parental urges and achieve economic redistribution of

resources as well as maintaining familial values and heritage. Non-penetrative sex using barrier methods is a safe choice that some may prefer.

**Sexual contact with one faithful partner:** This will work if neither person has STD at the beginning of the relationship. Both partners must ensure that neither is infected through other means, e.g. blood transfusion, intravenous drug use, poor hygiene, etc. This necessitates very good communication between partners before and during the liaison.

**Use of other techniques:** These include condoms, contraceptive creams, jellies, foam, diaphragm and proper selection of sexual partners. Table 5 summarises some of these other techniques for prevention and control of STD. It must be noted that different birth control methods provide different degrees of protection from STD (see Table 6). The male and female condoms provide the best single protective method. These improve with combinations e.g. condom and foam for STD other than HIV infections. The use

of contraceptive techniques for protection from STD will also affect reproduction and fertility. It must be emphasised that contraceptives are not without risks to reproductive health and reproduction e.g. hormone pills, Norplant, etc.

Underlying the preventive effort, is the need to reduce risky sexual behaviour. Safer sexual behaviour and condom use must be based on an understanding of human sexual behaviour and the factors that influence it. Poverty, urbanization, disintegration of family structures, and disruption of traditional values provide the contexts in which people engage in risky sex, e.g. commercial sex and multiple partners.

The prompt and appropriate treatment of STD will prevent transmission as well as complications. This requires resources for health services and access by the community. However cultural beliefs, lack of knowledge, traditional healers, and deteriorating economic conditions may discourage service availability and utilization. The emergence of antibiotic resistance further complicates STD case management. The absence of treatment (e.g. AIDS) or poor response further emphasise the primacy of STD prevention through behaviour modification and life-style changes.

## Discussion

The range of diseases spread by sexual activity has extended beyond gonorrhoea and syphilis. Many new diseases (e.g. HIV infection and AIDS) and old diseases (e.g. scabies and giardiasis) have been identified to be spread by intimate and sexual contact. The variety of diseases and poor reporting make it difficult to measure the extent of the problem and the exact contribution of STD to the cost of health service, morbidity, mortality and national development. However, the reported cases have indicated an increase of STD overall. This increase is probably multifactorial and includes behavioural and lifestyle changes, e.g. decreased age of sexual maturity, lower age of first sexual intercourse, increased use of non-barrier contraceptives, social changes (migration and urbanization), loss of family restraint, and faulty health services.

Health services and health workers must be responsible for failure to protect society from STD. This is especially so because they are currently the custodian of the knowledge and technology to control STD. The health care system also has the responsibility and has been allocated the resources by society to address the STD problem. Therefore the onus is on the health workers to find a solution to counter the

**Table 6. Birth control methods and STD prevention.**

Type of birth control	Protection against STD
<i>Condoms and foam used together</i>	Excellent protection. Two barriers against germs but not yet for HIV
<i>Condoms</i>	Good protection for penis, vagina, mouth and whatever these touch. More effective as birth control when used with foam
<i>Diaphragm and jelly or cream or cervical cap and jelly or cream</i>	Poor protection especially for HIV/AIDS. Two barriers around cervix. Use a condom too, to protect vagina and penis.
<i>Creams, jellies, foams used alone</i>	May give some protection for the STD but not HIV/AIDS. More effective when used with a condom or diaphragm
<i>The pill</i>	No protection.
<i>The intrauterine devices (IUD)</i>	No protection. Increases risk of infection spreading to uterus and tubes.
<i>Withdrawal (coitus interruptus)</i>	No protection.
<i>Natural birth control</i>	No protection.

*Note. Sexual intercourse during menstrual period is a very high risk activity for HIV/AIDS and hepatitis B infections*

The Pacific islands must examine reproductive health and family planning in the context of the future of Pacific societies. For this, basic information on sexual attitudes and practices need to be readily available. The change in sexual practice and sexuality with urbanization and modernization have not been systematically examined on an adequate sample of population and countries. The relationship of reproduction to sexual activity, time of first intercourse, opportunity cost of STD, and related traditional values need to be defined and addressed. The contribution of sexual activity, reproduction and reproductive health to a cohesive family and productive society are fertile areas for research.

In a region of rapid population growth and relatively high fertility, the effect of STD needs to be quantitatively and qualitatively clarified. Dispassionately looking at STD leading to increased infertility and deaths, this may be seen as a way for pregnancy prevention and population control. In fact, the HIV/AIDS epidemic have been viewed as a means of selective population control and even genocide. Some have even suggested that increased STD is a lifestyle indicator of social disintegration and loss of family restraint. That is, STD is a symptom of social disruption. In order to decrease the negative effects of STD on reproductive health and reproduction, several mechanism needs to be assured. These are as follows:

**Improve case finding and management of STD:** Early detection and proper treatment will decrease compli-



case finding but lacks the resources to enhance this through health education and community involvement. Default tracing is not carried out properly but will also contribute to the decrease of infection sources. Outreach and more accessible outlets for STD management is necessary, especially ones integrated to the primary health care services. The use of flow-charts and treatment regimes based on signs and symptoms will assist with management where laboratory tests are not available or reliable.

**Monitoring and surveillance:** The present STD data have limited usefulness for national monitoring and definition of the problem. There is under reporting of cases in contact with the health services and the number of patients using the health facilities. Under reporting is perpetuated by the social stigma related to STD. Therefore, there is a need to encourage dialogue about sex, sexuality and STD in an acceptable cultural context. The HIV/AIDS epidemic makes it urgent that Pacific islanders are able to communicate about their sexuality and report their STD status accurately. There is a need for appropriate and acceptable language to be developed by the churches, media and cultural leaders to enhance this dialogue. The reporting system also needs to be reviewed and the available data analysed to identify trends and areas for effective action. The use of sentinel populations for STD monitoring and surveillance should be instigated in all Pacific islands.

**Prevention of STD:** The improvement of health education and availability of information is essential for prevention. The health educators must be trained and provided with resources to educate. An acceptable and clear language needs to be agreed upon. Other methods of prevention lies in addressing the determinants of alcohol and drug use, promiscuity, safe sex and family disintegration. Therefore reinforcing social activities (e.g. traditional family values) may strengthen familial linkages that promote stable relationships, enhance self-esteem and restrain promiscuity. The churches are doing a good job but perhaps a change from the fire and brimstone approach may improve their effectiveness. The development of alternative employment may help decrease prostitution. Sex education in families and schools may demystify reproductive health and encourage national decision making on sexual matters. A user friendly health service may enhance case finding and community education.

**Use of legislation:** This has been considered in many instances. Some existing legislation cannot be enforced properly (e.g. prostitution) for various social, political and economic reasons. The strong religious basis of the Pacific

societies coupled with relatively stable governments should be a strong foundation for the development and enforcement of legislation to curb the factors contributing to STD e.g. truancy, prostitution and alcohol abuse. However for some reason this is not appropriately done.

**Other strategies:** The suggestion that STD is a social disease begs the question of why should we have sexual activity. If sexual activity is for reproduction only the control of STD will be much simpler. We are able to reproduce without sexual intercourse and have coitus without becoming pregnant. However sexual activity has also been found to be necessary for economic survival, recreation, psychological stability, gender power struggle, and politics. These

are complicated by the changing environment and values that determines the conditions of and for sexuality, reproduction, and reproductive health, e.g. food and nutrition, social norms and religious belief. An extreme belief is that in some societies female circumcision is used to define the role of

sexual activity and women. The Pacific societies must redefine the place of sexual activity and thus STD in the existing social milieu. Perhaps starting with simple questions like: Is STD a health priority? Is it a social goal?

At this time of their development it is not unreasonable for Pacific countries to redefine the role of sexual activity and reproduction in development. Is sexual activity primarily for reproduction and secondarily for other reasons? It is obvious that STD is mostly a result of sexual activity which in turn changes reproductive health. Perhaps the strategy for the control of STD lies in addressing the social diseases which manifests as increased reckless sexual activity. For such a strategy, health workers must be able to work as agents of social change with an understanding of the determinants of economic developments. Therefore the health workers of the Pacific must be trained in community development and be proficient in the social sciences. Such health workers are being trained at the Fiji School of Medicine and the Pacific Basin Medical Officers Training Program, Pohnpei.

## Conclusion

STD are health, economic and social issues with far-reaching effects. They are increasing and contributing to changes in reproductive health. The extent of this effect need to be better defined and managed in the Pacific with specific information exchanges and improved data collection. Some fundamental questions about the contribution of STD to sexual attitudes and reproduction and their interrelationship with sexual activity need to be addressed. The effects of STD on fertility may be of importance to

**“ At this time of their development it is not unreasonable for Pacific countries to redefine the role of sexual activity and reproduction in development. ”**

decrease pregnancy rate and thus act as a population control measure. Operations research must back STD control activities.

The knowledge and technology for the control of STD improvement of reproductive health and control of reproduction are available now. However the health services and health workers have failed to meet their responsibilities. Therefore the strategy for control of STD must include stimulating the health services and health workers to reduce STD and provide for better reproductive health status. A part of this strategy should be an integration of STD and reproductive health services to primary health care to minimise the stigma associated with attendance of special clinics and decrease service repetitions (e.g. vaginal examinations). Accepting that STD is a symptom of economic and social disease, the only way to curb the spread of HIV/AIDS and other STD lies in strengthening families, sex education in schools, equitable distribution of resources, a proactive health service, and equitable social and economic development. In order to succeed, the health workers and the health services must venture outside the disease parameters and be able to function as social change agents and health advocates. Reproduction, reproductive health and sexuality in the Pacific need not be an unholy trinity.

**“ ... the health workers and the health services must venture outside the disease parameters and be able to function as social change agents and health advocates. ”**

**Bibliography**

- Bell B. *Changing Bodies, Changing Lives*. Vintage Books, New York: 1987.
- Buve A, Laga M and Piot P. Where are we now? Sexually transmitted diseases. *Health Policy and Planning*, 1993; 8(3): 277-281.
- Connell EB and Tatum HJ. *Reproductive Health Care Manual* Creative Informatics, Inc. Durant, Oklahoma, USA: 1986.
- Cates W, Forley TMM and Rowe PJ. Worldwide patterns of infertility: is Africa different? *Lancet*, 1995; ii: 596-598.

- Dever GJ. Medical officers for Micronesia - the next generation. *Development Bulletin*, 1990; 14: 2-3
- Finau SA. Changing responsibilities in parenting the Pacific child. *Directions*, 1993; 15 (1): 49-59.
- Finau SA. Pacific health: an analysis to train new leaders *Asia-Pacific Journal of Public Health*, 1992/93; 6 (2): 46-53.
- Finau SA. The value of Pacific children: perspectives for a way forward. *Pacific Health Dialog*, 1994; (2): 52-63
- Green EC. Sexually transmitted disease, medicine and health policy in Africa. *Social Science and Medicine*, 1992, 35: 121-130.
- Jensen MD and Bobak IM. *Maternity and Gynaecologic Care: The Nurse and Family* The CV Mosby Company, St Louis, USA: 1985
- Laga M, Nsanze and Goeman J. The interrelationship of sexually transmitted diseases and HIV infection. implications for control of both epidemics in Africa. *AIDS*, 1991; 5 (supplement): 555-563
- Larson A. Social context of human immunodeficiency virus transmission in Africa. historical and cultural cases of East and Central African sexual relations. *Review of Infectious Diseases*, 1989, 11: 716-731.
- Lynch P and Rome P. *Sexually Transmitted Diseases (STD) and How to Avoid Them* Boston Women's Health Book Collective, Somerville, USA: 1985.
- Muir DG and Belsey MA. Pelvic inflammatory disease and its consequences in the developing world. *American Journal of Obstetrics and Gynaecology*, 1980, 138: 913-928
- Samisoni JI. Old school, new programme: the Fiji School of Medicine 1994. *Pacific Health Dialog*, 1994; 1(2): 67-71
- Wichman V. The economics of sex: what the economists forgot to remember. *Pacific Health Dialog*, 1995; 2(1), 57-60.
- Working Group on Health Consequence of Contraceptive Use and Controlled Fertility. *Contraception and Reproduction: Health Consequence for Women and Children in the Developing World* National Academy Press, Washington DC: 1989

**“ We all have to recognise that it is what people do, not what we would like them to do, which must underpin our efforts to stop HIV transmission. Finger wagging will undermine the advances we have made. ”**

*Jim Hyde, General Manager, Victorian AIDS Council*