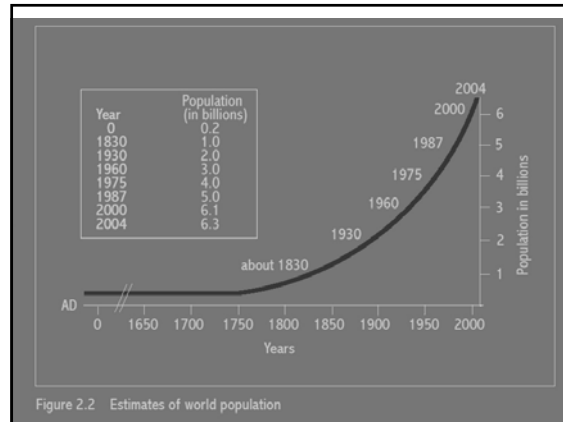


## The Environment, Population and Reproductive Health



### Estimated Number of Births & Deaths Resultant Population Increase, Mid-2003

Total Pop., Mid-2003 6.3 billion (G.R. 1.3%)

	Births	Deaths	Population Increase
No. per year	139,000,000	57,000,000	82,000,000
No. per week	2,673,000	1,096,000	1,577,000
No. per day	381,857	156,571	225,286
No. per minute	265	109	156

### Calculating the Rate of Population Growth

$$\text{Growth rate \%} = \frac{\text{Birth rate}^* - \text{Death rate}^*}{10}$$

\*Rates/1,000 population

### Population Growth Rates

• **Growth Rate (%) Doubling Time (yrs)**

• 4.0	17
• 3.0	23
• 2.0	35
• 1.0	69
• 0.002	35,000

### Estimates of Birth, Death and Growth Rates, Mid-2003

	Pop.	Births/ 1000	Deaths/ 1000	Growth rate (%)	D.T. (yrs)
<b>WORLD</b>	6,314M	22	9	1.3	53
Africa	861M	38	14	2.4	29
Asia	3,830M	20	7	1.3	53
L. America	540M	23	6	1.7	41
Europe	727M	10	12	-0.2	-
N. America	323M	14	8	0.5	138

Estimate of Birth, Death & Growth Rates Mid-2003, Selected Countries				
Pop.	Births/ 1000	Deaths/ 1000	Growth rate (%)	D.T. (yrs)
China 1,289M	13	6	0.6	115
India 1,069M	25	8	1.7	41
Russia 145M	10	16	-0.7	-
U.S. 291M	14	9	0.6	115

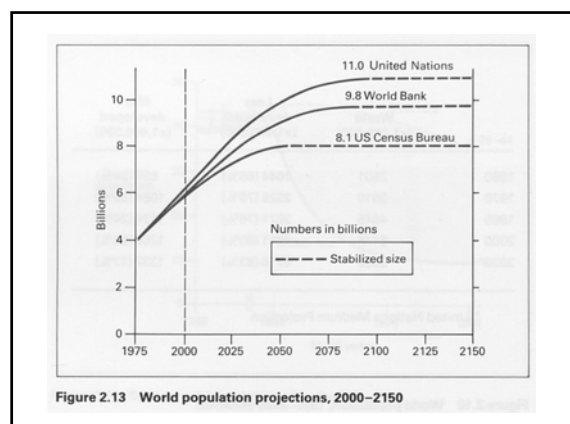
	World Population, 1950-2020 (millions)		
	World (x1,000,000)	Less Developed (x1,000,000)	More Developed (x1,000,000)
1950	2,501	1,644 (68%)	857 (34%)
1970	3,610	2,526 (70%)	1,084 (30%)
1985	4,845	3,671 (76%)	1,174 (24%)
2003	6,314	5,112 (81%)	1,202 (19%)
2010*	6,903	5,687 (82%)	1,217 (18%)
2025*	8,082	6,842 (84%)	1,240 (16%)

\*United Nations Medium Projection

Population Projections (Millions)				
	1994	2003	2010	2025
World	5,607	6,314	6,903	8,082
Africa	700	861	979	1,288
Asia	3,392	3,830	4,235	4,965
Latin America	470	540	591	697
Europe	728	727	731	715
North America	290	323	333	376

Population Projections, Selected Countries (Millions)					
	1994	2003	2010	2025	2050
China	1,192	1,289	1,394	1,561	1,394
India	912	1,067	1,197	1,441	1,628
U.S.	261	292	298	335	422
Indonesia	200	221	239	275	316
Russia	148	146	142	135	119
Nigeria	98	134	150	203	307
Mexico	92	104	118	140	153

Year in which the world attains replacement fertility	World population at replacement (x1,000,000)	Eventual point at which population stabilizes
2000-2005	5.9	8.4
2020-2025	8.4	11.2
2040-2045	12.0	15.1



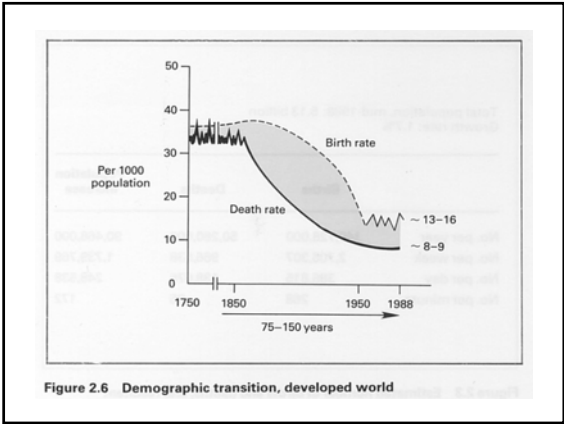


Figure 2.6 Demographic transition, developed world

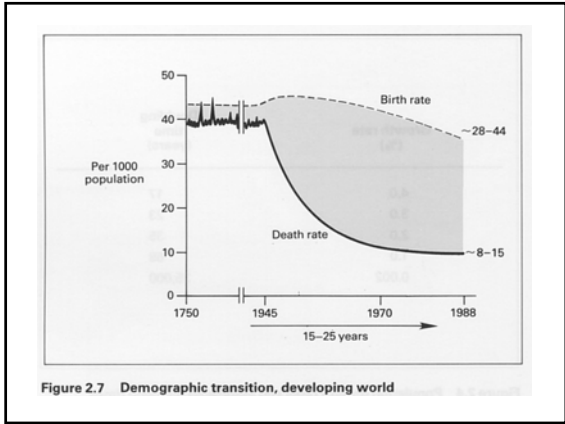


Figure 2.7 Demographic transition, developing world

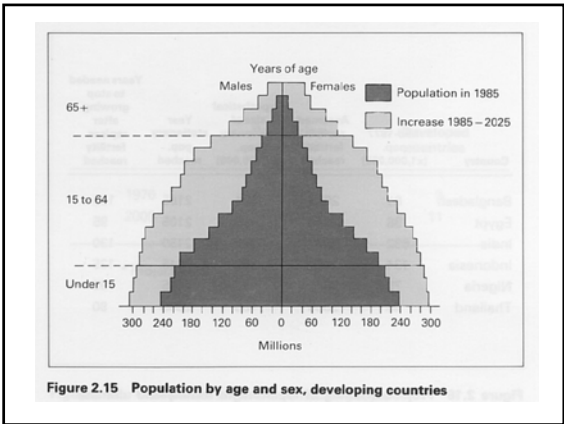


Figure 2.15 Population by age and sex, developing countries

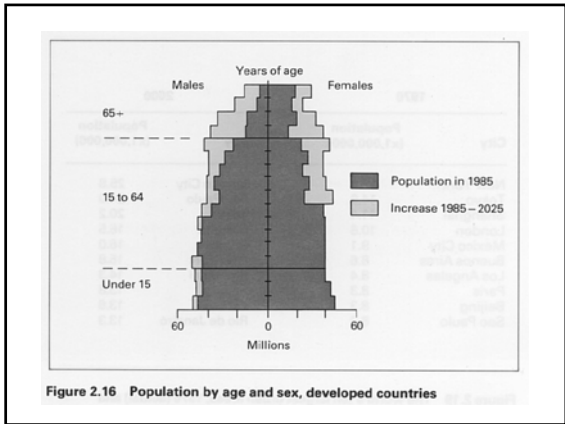


Figure 2.16 Population by age and sex, developed countries

Urban Populations (Millions)			
	1970	2001	2015
Sao Paolo	8	18	21
Mexico City	9	18	20
Shanghai	11	13	14
Mumbai	6	17	23
Calcutta	7	13	17
Jakarta	4	11	17
Beijing	7	11	12

Urban Areas Larger Than 5 Million People		
	Developing countries	Developed countries
1970	11	9
2000	37	11

**Contraceptive Prevalence:  
Developing Countries  
(Approximate %)**

<u>1960</u>	<u>1995</u>
5%	50%

**Percent of married women  
15-49 using modern  
methods of contraception**

Region	%
Sub-Saharan Africa	13
Latin America and the Caribbean	62
Asia (excluding China)	44
Europe	51
North America	72

**Percent of married women  
15-49 using modern  
methods of contraception**

Country	%
China	83
Thailand	70
Russia	49
Nigeria	9
Uganda	18
South Africa	55

**Health Benefits of Contraception**

- 187 M unintended pregnancies
- 60 M unplanned births
- 105 M abortions
- 2.7 M infant deaths
- 215,000 pregnancy-related deaths
- Still an additional 201 million women with unmet need

**1974 Population Conference,  
Bucharest**

**North-South Debates  
Western Nation Imperialism**

**1984 Population Conference,  
Mexico City**

**U.S. Stance: Free Market Systems  
Population Growth Not An Issue  
Abortion (With Catholic Church)**

**Developing Country Concerns Re:  
Population**

**International Conference on  
Population and Development (ICPD)**

(Cairo, September, 1994)

**Major Issues:**

**Population**  
**Environment**  
**Human Rights**  
**Empowerment of Women**  
**Women's Sexual & Reproductive  
Health & Rights**

**Cairo - The Setting**

**15,000 Attendees**  
**3,700 Delegates from 179 Countries and  
8 Observer Delegations**  
**4 Presidents, 7 Prime Ministers, 5 Vice  
Presidents, Many Parliamentarians**  
**1,200 Nongovernmental Organizations  
(NGOs)**  
**4,200 Journalists**

**Brundtland of Norway**

**“Morality becomes hypocrisy if  
it means accepting mothers  
suffering or dying in  
connection with unwanted  
pregnancies and illegal  
abortions, and unwanted  
children living in misery ..”**

**Environmental Issues**

**Conflicts Between Developed and Less  
Developed Countries**

**Developed Countries**

**Consumption Patterns**  
**Industrialization**  
**Pollution**

**Environmental Issues (cont.)  
Less Developed Countries**

**Population**  
**Deforestation**  
**Loss of Top Soil**  
**Early Industrialization - Pollution**  
**Urbanization**

**Water Issues**

- **Projections for the future are  
daunting**
- **Again, impact heaviest on the  
poorest countries**
- **Increases in population numbers  
play a major role**

## **ICPD Programme of Action**

**Overall emphasis on sustainable development, humanitarian goals, and status of women rather than on demographic targets**

## **Empowerment of Women**

**“The empowerment and autonomy of women and the improvement of their political, social, economic and health status is a highly important end in itself ...”**

## **Empowerment of Women**

**Economic Equity:  
Access To Jobs, Equal Pay**

**Health Equity:  
Right to Reproductive and Sexual Health**

**Political, Legal, Educational and Social Equity**

## **Abortion in Cairo**

**“In no case should abortion be promoted as a method of family planning ...  
All governments ...are urged ...to deal with the health impact of unsafe abortion as a major public health concern...  
In circumstances in which abortion is not against the law, such abortion should be safe.”**

## **Human Rights**

**“These [human] rights rest on the recognition of the basic rights of all couples and individuals to decide freely and responsibly the number, spacing and timing and to have the information and means to do so and the right to attain the highest standard of sexual and reproductive health ... free of discrimination, coercion and violence ..”**

## **Reproductive Health Issues**

**Family Planning Services  
Prevention, Diagnosis and Treatment  
of  
STDs and HIV/AIDS  
Adolescent Sexuality and Pregnancy  
Maternal Mortality  
Abortion**

## **Family Planning Services**

**Make Available All Effective  
and Safe Methods of  
Contraception On A  
Voluntary Basis With Full  
Informed Consent**

## **Family Planning Methods**

**Oral Contraceptives  
IUDs  
Injectables & Implants  
Barrier Methods  
Periodic Abstinence  
Sterilization Procedures**

## **STDs and HIV/AIDS**

**Gonorrhea and Syphilis  
Chlamydia  
Herpes  
Trichomonas  
Monila  
HPV  
HIV/AIDS**

## **STDs and HIV/AIDS (cont.)**

**Prevention Education  
Condom Use  
Women-Controlled Methods  
Diagnosis and Testing Issues  
Treatment Issues**

## **Adolescent Sexuality and Pregnancy**

**The Issue Worldwide,  
Particularly in Urban Areas  
The Controversies  
“The Rights, Duties and  
Responsibilities of Parents”**

## **Maternal Mortality**

**500,000 Deaths Annually, 98% in  
LDCs  
MM Ratios 10-100 Times Those in  
Developed Countries  
LDCs: 100-1000/100,000 Livebirths  
US: 8/100,000 Livebirths**

## Maternal Mortality (cont.)

High Incidence of Home Deliveries, Particularly in Rural Communities, with TBA, Relative or No-One in Attendance

## Maternal Mortality: Causes

Obstructed Labor/Ruptured Uterus  
 Postpartum Hemorrhage  
 Toxemia/Eclampsia  
 Postpartum Sepsis  
 Abortion Complications  
 Role of Age and Parity

## Maternity Care Interventions: Emergency Obstetrical Care

Transfusions  
 Parenteral Antibiotics  
 Cesarean Section  
 Treatment of Abortion

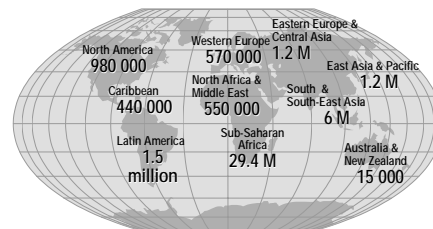
## Abortion

Incidence Worldwide:  
 40-50 Million  
 Estimated Deaths Annually  
 From Unsafe Abortions:  
 60,000-110,000  
 Single Most Controversial  
 Issue in Society Today

## Global Summary, HIV/AIDS Pandemic, December 2002

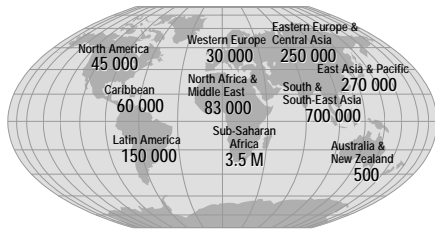
	Total	Children<15
• People living with HIV/AIDS	42 million	3.2 million
• People newly infected, 2002	5 million	800,000
• AIDS deaths in 2002	3.1 million	600,000

## Adults and children estimated to be living with HIV/AIDS as of end 2002



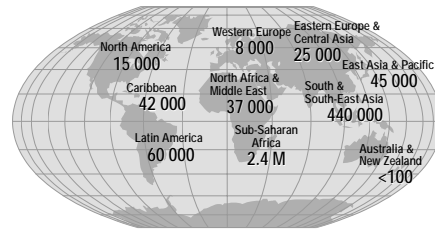
**Total: 42 million**

### Estimated number of adults and children newly infected with HIV during 2002



**Total: 5 million**

### Estimated adult and child deaths from HIV/AIDS during 2002



**Total: 3.1 million**

### About 14 000 new HIV infections a day in 2002

- More than 95% are in developing countries
- 2000 are in children under 15 years of age
- About 12 000 are in persons aged 15 to 49 years, of whom:
  - almost 50% are women
  - about 50% are 15–24 year olds

### Women and AIDS

**“...It is only when women can speak up, and have a full say in decisions affecting their lives, that they will be able to truly protect themselves -- and their children -- against HIV.”\***

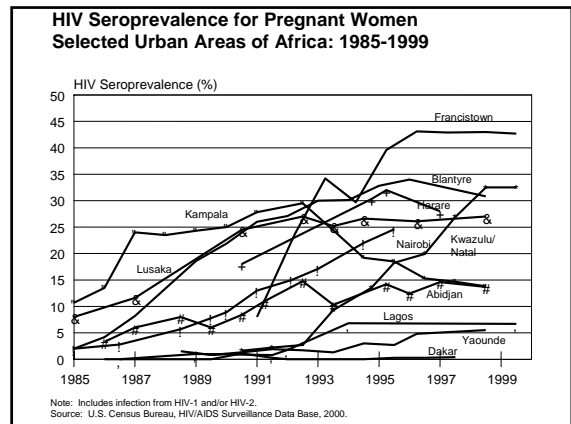
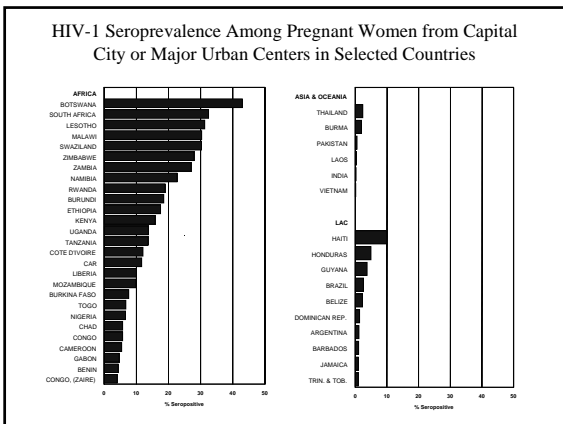
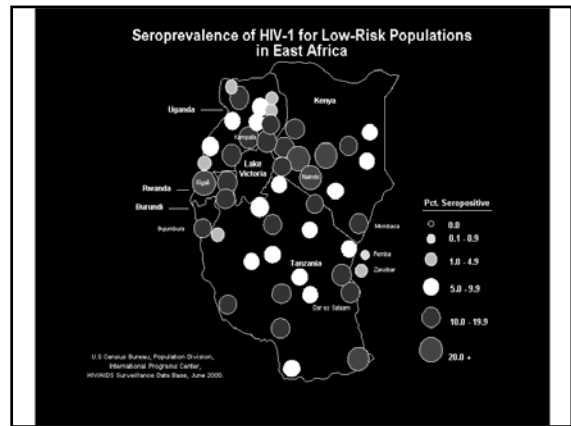
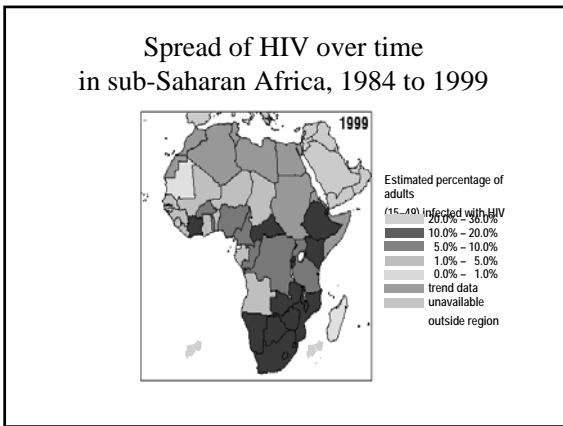
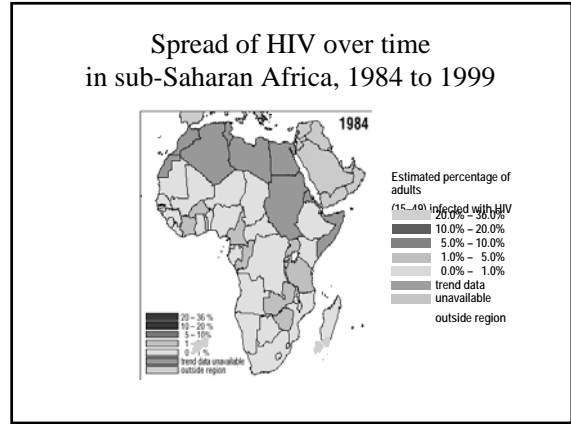
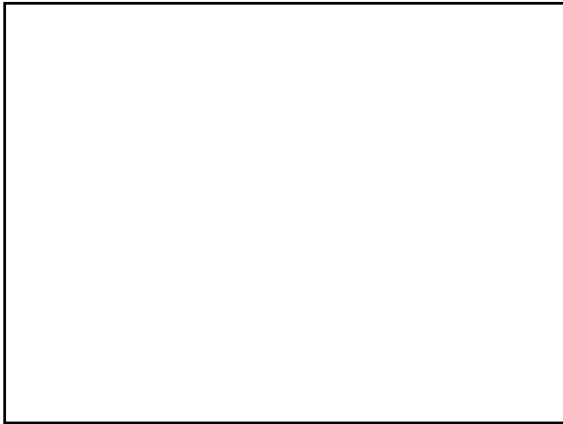
\*UN Secretary-General Kofi Annan

### Women and AIDS

- The vulnerability of women
  - 12-13 African women infected per 10 men
- The threat to sex workers
- The threat to spouses
- Relationship with F.P. programs
- The role of prevention
  - Safe sexual practices
  - Microbicides & condoms (male & female)
  - Vaccines

### The AIDS Orphan Tragedy

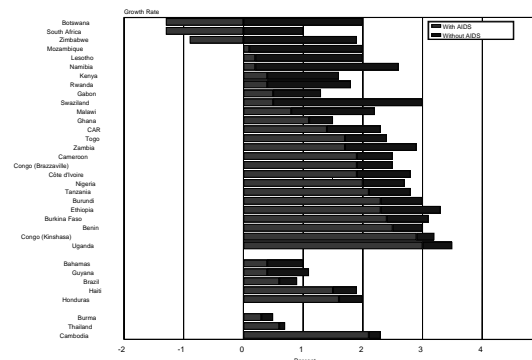
- An estimated 12-14 million children have lost one or both parents
- Loss of the mother is particularly devastating
- Educational, food, housing and nurture needs are grossly neglected



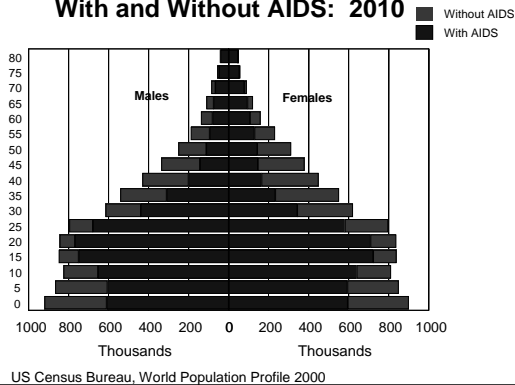
## Factors that influence the spread of HIV

- **Viral Factors**
    - HIV strains
    - Viremia
  - **Local Genital Factors**
    - Presence of STDs
    - Male circumcision
    - Use of vaginal products
  - **Sexual Behavior**
    - Rate of partner exchange
    - Sexual mixing patterns
    - Type of intercourse
    - Size of and rate of contact with core groups
    - Level of condom use
  - **Demographic Factors**
    - Sexually active age groups to other age groups
    - Male to female ratio
    - Urban:rural%
    - Migration patterns
  - **Economic and Political Factors**
    - Level of poverty
    - War and social conflicts
    - Status of transport and mobility of population
    - Performance of health care system
    - Response to epidemic
- (from Piot-1994)

## By 2010, Botswana, South Africa and Zimbabwe will all be experiencing negative population growth



## Population of Zimbabwe, With and Without AIDS: 2010



## Leading causes of death globally, 1999

Rank	% of total	Disease	Value
1	12.7	Ischaemic heart disease	12.7
2	9.9	Cerebrovascular disease	9.9
3	7.1	HIV/AIDS	7.1
4	4.8	Chronic obstructive pulmonary disease	4.8
5	4.2	Perinatal conditions	4.2
6	4.0	Diarrhoeal diseases	4.0
7	3.0	Tuberculosis	3.0
8	1.9	Malaria	1.9
11		Malaria	

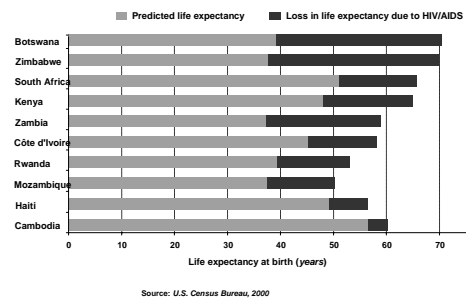
Source: The World Health Report 2000, WHO

## Leading causes of death in Africa, 1999

Rank	% of total	Disease	Value
1	10.3	HIV/AIDS	10.3
2	9.1	Acute lower respiratory infections	9.1
3	7.3	Malaria	7.3
4	5.9	Diarrhoeal diseases	5.9
5	4.9	Perinatal conditions	4.9
6	3.4	Measles	3.4
7	3.2	Tuberculosis	3.2
8	2.4	Cerebrovascular disease	2.4
9		Ischaemic heart disease	
10		Maternal conditions	

Source: The World Health Report 2000, WHO

## Predicted loss in life expectancy due to HIV/AIDS in children born in 2000



### Total Orphans, 34 Study Countries

---

	AIDS Orphans	Orphans of Other Causes	Total Orphans
1990	3.6 million	18.6 million	22.2 million
2000	15.8 million	18.9 million	34.7 million
2010	30.2 million	14.0 million	44.2 million

### Infectious Disease Control Basic Principles 1:

---

- Modes of transmission
- Stages of the epidemic
- Epicenters/ “hot zones” Concept of “core transmitters”
- Those most likely to transmit/Those most likely to contract (“TMLTC”)

### HIV Transmission Global Summary

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### Infectious Disease Control Basic Principles 1:

---

- Modes of transmission
- Stages of the epidemic
- Epicenters/ “hot zones” Concept of “core transmitters”
- Those most likely to transmit/Those most likely to contract (“TMLTC”)

### RISK POPULATIONS

---

- Commercial sex workers
- Male migrant workers (e.g. truckers, construction workers, seafarers, urban skilled and unskilled)
- Military/police
- Civil servants
- Men who have sex with men (MSM)
- Injecting drug users
- University students
- STD patients (private and public sector)
- Youth (young men and women), single women

### RISK LOCATIONS

---

- Brothels, bars, hotels, massage parlors, beauty salons, night clubs
- Truck stops, border crossings, bus terminals, train stations
- Military bases/Harbors
- Video parlors
- Worksites (mines, construction sites)



## Supporting Elements for an HIV/AIDS Program

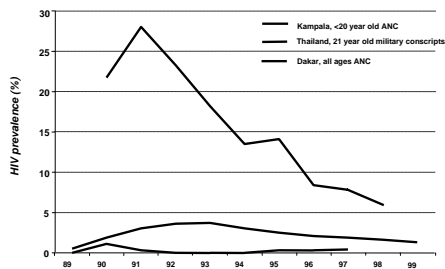
- **Policy Reform**  
(government commitment, allocation of resources, dealing with discrimination, stigma)
- **Biomedical Research**  
(STD Diagnostics, microbicides, Mother to child transmission interventions, preventive and therapeutic vaccines)
- **Social Science Research**
- **Surveillance (biologic and behavioral)**
- **Improved distillation and use of research and “lessons learned”**



## Global Response: Successes

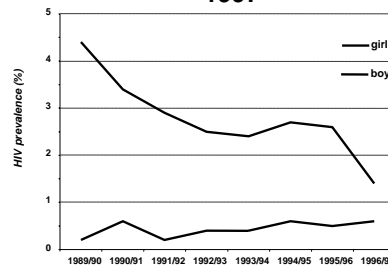
- At project level, we have evidence of sustained behavior change to reduce the risk of HIV transmission, resulting in decreased HIV and STD prevalence
- At national level, we have two categories of success:
  - Preventing a major epidemic  
(Senegal, Philippines, Indonesia)
  - Reducing an existing severe epidemic  
(Uganda, Thailand, Zambia, Dominican Republic)

Trends in HIV prevalence in selected populations in Kampala, Uganda; Dakar, Senegal; and Thailand; 1989 to 1999



Source: National STD/AIDS Control Programmes, Senegal and Uganda  
Armed Forces Research Institute of Medical Sciences, Thailand

HIV prevalence rate among 13 to 19-year-olds, Masaka, Uganda, 1989 to 1997



Source: Kamali et al. AIDS 2000, 14: 427-434

## Key Elements of the Uganda Response to HIV/AIDS

- **Strong political commitment starting in 1986 which encouraged all political leaders to speak out on AIDS at all opportunities**
- **Free press encouraged to print candid, powerful articles on AIDS-intense ongoing use of mass media (radio, TV, soap operas, etc)**
- **Reliable ongoing national seroprevalence data which was routinely disseminated**

Derived from E. Marum-USAID/CDC

## Key Elements of the Uganda Response to HIV/AIDS

- **Public figures openly discussed HIV status (Philly Bongole Lutaya, Major Ruranga)**
- **TASO established in 1987-has served 50,000 clients**
- **AIDS Information Centers established in 1990-have served 500,000 clients (same day results and “post test clubs”)**
- **Strong religious networks established for both care and prevention (Islamic Medical Association, Protestants, Catholics)**

Derived from E. Marum-USAID/CDC

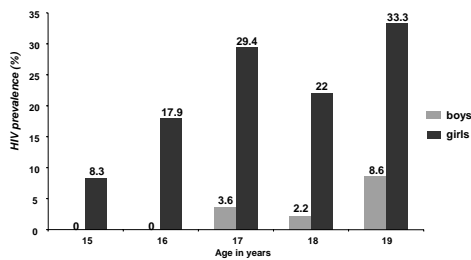


## Resource Needs and Gaps


## Reproductive Health and HIV/AIDS Programs

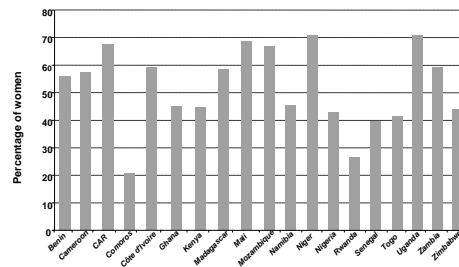
- Increased vulnerability of girls and women
- Mutual goals and messages (high rates of pregnancies and HIV infections, particularly in young women and girls)
- “No missed opportunities”
- Recognize extensive FP infrastructure compared to HIV

### HIV prevalence rate among teenagers in Kisumu, Kenya, by age



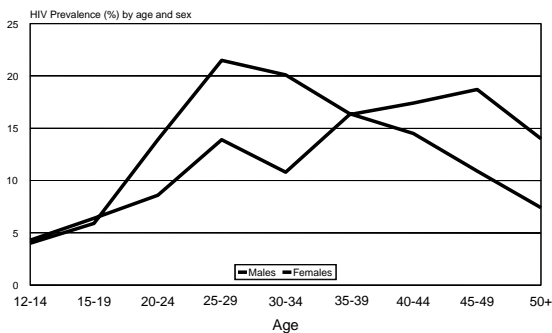
Source: National AIDS Programme, Kenya, and Population Council, 1999

### Percentage of women who are mothers or pregnant by the end of their teens, 1990-1998

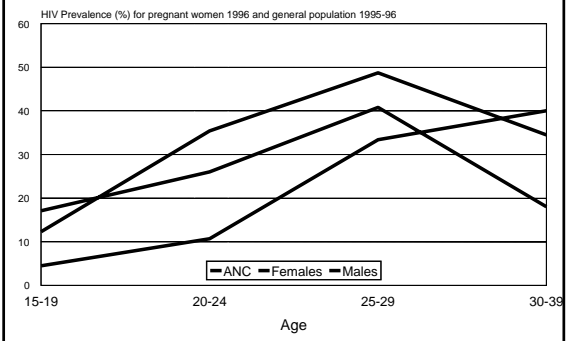


Source: Demographic and Health Surveys, various countries

### In sub-Saharan Africa, HIV Prevalence is much higher among young females than among males of their same age cohort as is seen in Rwanda, 1997.



### All over sub-Saharan Africa HIV prevalence for young women is higher than in young men as is seen in this urban center of Zambia.



Source: Fyikenes, Musonda, Sichone, et al. 1999.

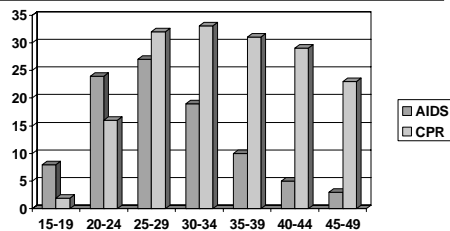
## Perceived advantages for the use of FP Settings

- Access to women
- May improve contraceptive compliance
- Burden of disease
- STDs have implications for choice of contraceptives
- Impact of STDs on HIV transmission
- Cost and time effective
- Holistic approach to patient

## Perceived obstacles for the use of FP Settings

- Dilution of resources (staff, costs, time)
- Stigma
- Physical space for pelvic exam
- Access to commodities
- Partner referral issues
- Lack of STD diagnostics for asx women
- Deficiencies of syndromic approach to vaginal discharge
- Public health impact-is this the most critical population?

## Age Distribution of Reported AIDS Cases and Age Specific Contraceptive Prevalence

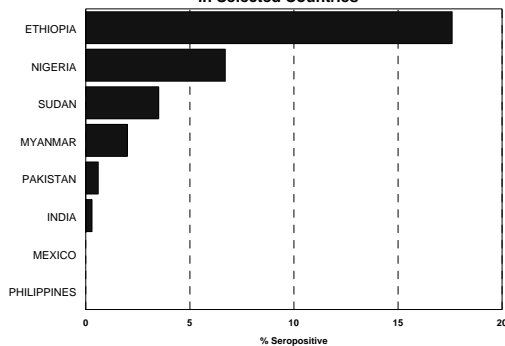


## Limitations of Family Planning Settings

*“...inherently weak interventions for often the wrong populations...”*

- Behavior Change
  - (dual protection-can it work?)
- STI management
  - significant number of asx cases
  - vaginal discharge syndromic algorithm lacks sensitivity and specificity

## HIV-1 Seroprevalence Among Pregnant Women from Capital City or Major Urban Centers in Selected Countries



## What Family Planning Programs Can Do-1

- Determine phase of epidemic and risk potential for impending generalized epidemic
- Determine profile of Family Planning Clients-considering both dual protection messages and STI management
- Expand counseling, condom distribution and promotion (focus on couples, men)

## What Family Planning Programs Can Do-2

---

- Generate demand and extend contraceptive and condom use through social marketing
- Broaden use of mass media by integrating HIV/AIDS messages with family planning messages
- During policy dialogue, include HIV/AIDS
- Increase outreach to youth
- Recognize special needs of HIV positive women (contraception, abortion, MTCT)