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Philippine Estimates of the Most At-Risk Population and People Living with HIV

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Estimation Process

The estimation of the most at-risk population is dependent on available data. For the 2011 estimation, multiple sources, that used various methods, were reviewed, assessed and triangulated. Sources included national surveys, multi-site studies, local studies, surveillance data, and data found in facilities. Methods include mapping, actual counting, line listing, consensus building, key informants interviews, multipliers, and desk reviews of studies done in the Philippines and in neighboring countries.

The PLHIV estimates used the latest version of the UNAIDS software, Epidemiological Estimation Package (EPP)/Spectrum. This software has fixed data inputs and generates projections based on complex mathematical equations. A discussion of the full technical details of EPP and Spectrum can be found at http://www.unaids.org/..... Sources for the data inputs were agreed upon and calibrated by a Technical Team. After the input sheets were completed, the projections were run by the National Epidemiology Center of the Department of Health.

Once the MARP & PLHIV estimates had been thoroughly discussed by a Technical Team, the estimates were presented to a bigger multi-sectoral group to gain their consensus for these country estimates.

Limitations

- The MARP size estimates and PLHIV estimates in this document are national estimates. Actual numbers may be higher or lower in specific localities. Since these estimates are dependent on the availability of data, it is not yet possible to produce robust estimates for each locality due to inadequate local data.
- The 2011 UNAIDS EPP/Spectrum software requires numerous data inputs. To date, some of these are not yet collected in the Philippines. For some data points, like prevalence of the remaining population, proxy data was used that could approximate the actual data if it were collected.
- It should be noted that for some MARPs, the proportion of the MARP to the total population has remained the same from 2009 to 2011, but the absolute values have changed. This is due to the increase in the total number of Filipinos each year. So as the population size of the Philippines increase, the total number of MARPs also increase even if the proportion remains the same.
- These MARP and PLHIV estimates were based on information available as of July 2011. Any more recent information will be considered in the next estimation process.

Definitions

- **Female Sex Workers (FSW):**
    - **"Registered" FSW (RFSW) or *FSW based at a SHC-Registered Establishment:* Born female**, **15** years or older, who accepted payment (cash or kind) in exchange for sex in the **past ONE month** and is based in an entertainment establishment **registered** at the local social hygiene clinic.
    - **"Freelance" FSW (FFSW) or *FSW not based at an establishment registered with the SHC:* Born female**, **15** years or older, who accepted payment (cash or kind) in exchange for sex in the **past ONE month**, and is street-based or based in an entertainment establishment **NOT** registered at the local social hygiene clinic. This includes those found in all kinds of cruising sites, and those who practice indirect sex work.
- **Clients of Female Sex Workers:** Born male, 15 years and older, who paid a female in exchange for sex, in the past 12 months.
- **Injecting Drug User (IDU):** Male or female, 15 years or older, who injected drugs not prescribed by a physician, in the **past 6 months**.
- **Males who have Sex with Males (MSM):** Born male, 15 years or older, who reported oral or anal sex with another male in the **past 12 months**.

Remaining Population:

For the Estimates of People Living with HIV in the EPP/Spectrum, the remaining population includes male clients of female sex workers, males and females who used to be part of the most at-risk population (MARP), male and female partners of MARPs, overseas Filipino workers who are at-risk for HIV, and the remaining population who are not included in those already mentioned.

Size Estimates of the Most At-Risk Populations

*Some parts of the documentation below were directly lifted from the 2009 Modes of Transmission report of the National Epidemiology Center, Department of Health.

Three most at-risk populations fuel the HIV epidemic in the Philippines: males who have sex with males, injecting drug users, and female sex workers. Males who have Sex with Males are the major driver of the epidemic. The epidemic among Injecting Drug Users has taken off in some areas, but remains at bay in others. Female Sex Workers and their clients continue to contribute to new cases, although in a lesser scale compared to MSM and IDU.

Female Sex Workers based in Registered Entertainment Establishments

In the published report of the *2007 Estimates of Adult Living with HIV in the Philippines* (a national consensus), it was estimated that there were 76,000 RFSWs which is 0.30% of the adult female population (aged 15-49).

For this estimation, an attempt to get data from all Social Hygiene Clinics (SHC) in the country was done. There are a total of 119 SHCs in the country, however not all of them are functional. To date, an official assessment of the functionality of all these SHC has not yet been done.

From those that reported, the number of RFSWs visiting Social Hygiene Clinics (SHC) in 2010 was summated. For areas that did not have 2010 data, their reported 2009 data was used.

Eighty-nine SHCs provided information which resulted in 47,250 RFSWs. For this estimation process, it was assumed that the SHCs who reported account for about 85% of all functional SHCs. Thus, 7,300 (or the remaining 15%) were added to the estimate. This brought the total number of RFSWs to 54,485 or 0.12% of the total adult female population (aged 15 to 49 years).

Freelance Female Sex Workers

The basis for estimating freelance female sex workers differed in the three geographical areas due to differences in data availability.

For Metro Manila, the following data were available: (1) mapping for the 2011 IHBSS venue list; (2) actual counts from the 2-hour surveillance period at venues during the 2011 IHBSS; (3) 2011 estimates from the SHC physicians of 15 Metro Manila SHCs of the percentage of establishments and FSWs who do not access the SHC (Manila and Muntinlupa were excluded because these cities do not register entertainment establishments); (4) 2009 FFSW population size estimates of eight sites in Metro Manila.

In 2009, the actual counts during IHBSS were used. However, this number was limited to FSW who were in cruising venues, and was most probably an underestimate. Therefore, the total number of FFSW per site was summated for each data source. Then the average of the three 2011 data sources were taken and compared with the 2009 estimate for consistency. This resulted in 7,504 FFSW or 0.22% of the adult female population residing in Metro Manila. This number is higher than the 2009 value by 850.

For Cebu province, the following data sources were available: (1) mapping for the 2011 IHBSS venue list; (2) actual counts from the 2-hour surveillance period at venues during the 2011 IHBSS; (3) 2011 estimates from the SHC physicians of Cebu City, Mandaue City and Lapu-Lapu

City of the percentage of establishments and FSWs who do not access the SHC; (4) 2009 FFSW population size estimates of eight sites in Metro Manila.

The total number of FFSW per site was summated for each data source. Except for mapping, all three totals were equivalent to a high proportion of the total female population of Cebu province (0.5% to 1.4%). In 2009, the estimate of FFSW in Cebu City was 1,940 which accounted for 0.46% of the population of Cebu City. Metro Cebu is more urbanized, more populated, and has more venues for sex work compared to the rest of the province. Thus it is more probable that big cities have a higher density of sex workers than small municipalities. It would then be incorrect to apply the 0.46% to the whole province. Since it is unlikely that 0.5% to 1.4% of the total adult female population of the province are sex workers, data from mapping was used. The FFSW mapped in Cebu City was equivalent to 0.20% of the total adult female population in Cebu province, while Mandaue City mapped an equivalent to 0.21%. For this estimation process, 0.020% was applied to the total adult female population of Cebu province. This resulted in 1,989 FFSW.

For the rest of the country, the following data was available: (1) mapping of selected sites for the 2011 IHBSS venue list; (2) actual counts from the 2-hour surveillance period at venues of selected sites during the 2011 IHBSS; (3) 2011 estimates from the SHC physicians of the percentage of establishments and FSWs who do not access the SHC; (4) 2010 estimates from the Rapid Assessment of HIV Vulnerability (RAV); (5) 2009 FFSW population size estimates computed from the IHBSS site with the lowest proportion of FFSW to the adult female population. The proportions were based on the actual count of FFSW during the 2-hour surveillance period during the 2009 IHBSS.

Despite the seemingly abundant sources of information, most of these data were gathered from only a few areas. Only the RAV provided insight to non-IHBSS sites which compose the majority of the category “rest of the country”. Thus, for this estimate, the proportion used in the 2009 high estimate of FFSW (0.14%) was applied to the rest of the country. This resulted in 25,198 FFSW.

Total Number of Female Sex Workers

The Asian Model proposed by Vandepitte J, et al (2006) assumed that 0.2% of the total female population (aged 15 to 49 years) are FSWs or 44,807 FSWs nationwide. The Asian Model does not differentiate between registered and freelance FSWs. The 2007 national consensus deemed that the Asian Model percentage underestimated the FSWs in the Philippines. It estimated that there were 140,000 to 180,000 FSWs in the country. This assumes that 0.6 to 0.9% of adult females are FSWs. The significant decrease in the number of RFSWs in this year's estimate lowered that proportion of females assumed to be FSWs to 0.40% of the total female population in the country; this is equivalent to 89,175 are FSWs.

Clients of Female Sex Workers

The 2003 National Demographic and Health Survey showed that 1.9% of the total male population aged 15 to 49 years old paid for sex in the past 12 months preceding the survey, resulting in 436,702 clients of FSWs if applied to the total adult male population. This value was used as the country's low estimate of clients of FSW.

The *2000 Male Sexual Risk Behavior and HIV/AIDS: A Survey in Three Philippine Cities*, more popularly known as the MENNSA study by Ramos-Jimenez P, et al (2000) showed that 5.1% of men had paid money for sex for the past year. The local Young Adult Fertility and Sexuality Study (YAFS), as cited by Balk et al (1998), showed that 5% of males aged 20-24 years had paid for sex in the past 12 months. Both national survey results showed 5% of the adult males were clients of FSW, or 1,149,215 males. This was used as the country's high estimate of clients.

Other studies reviewed had a higher estimate of the number of clients. However, these percentages, when applied to the whole population of males across the country, may be an overestimate. A study by Wi, et al. (2002) showed that 6% of the total male population in selected sites have ever paid for sex in the past 6 months. A commentary by Brown T (2003) reported that 7% of men paid for sex at least once a year, but the figure was not referenced. Tiglao et al (1991) reported that 15.6% of respondents in Metro Manila paid for sex in the past 12 months. The study did not stratify according to gender.

Males who have Sex with Males

The Philippine HIV & AIDS Registry data shows a rapidly increasing trend away from heterosexual sex and toward male to male transmission. This has been the predominant mode of transmission since 2007. Males who have Sex with Males (MSM) make up the largest at-risk population in the Philippines, and is the driving force of the HIV epidemic in the Philippines.

The challenge with estimating the total number of MSM in the country is in the inclusion criteria. Males who had ever experienced sex with another male should be differentiated from

those who are "current MSM" or has had sex with males in the past 12 months. Most studies reviewed looked only at those who were "ever MSM", except for a few listed below.

The MENNSA report stated that 13.8% of men had ever sex with another man, with approximately one-fourth of these involving anal sex.[25] However, only 1.7% or 390,733 men aged 15-49 years old had anal sex with another man in the past 12 months. This represents the country's low estimate of MSM.

A study by Wi, et al. (2002) reported that 3% of the male population had anal sex with another man in the past 6 months. Since there was no more recent study of MSM population size, and most studies with this data proved similar findings, 3% was applied to the present population size of the adult males to compute the high estimate of MSM in the country. This resulted in 689,529 males, and was used in the estimation.

The *2007 Estimates of Adult Living with HIV in the Philippines* estimated 200,000 to 670,000 MSM in the country, or 1% to 3% of the total adult males. Other studies corroborate the above estimates. A 1993 study funded by the Australian International Development Assistance Bureau (AIDAB) showed that 2.6% of males in Metro Manila university fraternities identified themselves as "gay". Furthermore, 7% of sexually active males had ever had sexual experience with another male, but only 2.2% were penetrative anal sex.

Mapping activities of the 2009 IHBSS sites found 26,786 MSMs in 20 sites, which represent 0.76% of the male population. However, since mapping does not capture hidden populations, this rate is an underestimate. The 2003 NDHS also seemed to underestimate the MSM population. It reported that 5.37% of men aged 15-49 years old ever had sex with another man, but only 0.38% had sex with another man in the past 12 months. The YAFS 2 survey, which included only men aged 15 to 24 years old, shows that 6% of this age group ever had sex with another man.

Injecting Drug Users

A nationwide study by the Dangerous Drug Board (DDB) of the Philippines reported that 2% to 4% of the general population use illegal drugs, and 0.89% of these drug users were IDUs (this rate is similar to a DOH study cited by the Asian Harm Reduction Network (AHRN) in 1998, showing that 0.1% of drug users are IDUs). Based on these estimates, there are 9,078 to 18,155 IDUs in the Philippines.

However, during the National Consensus of Population Size Estimates in December 2009 at Heritage Hotel Manila, three cities with identified networks of IDUs had estimates which were higher than the DDB estimates. Cebu City estimated 2,027 IDUs in the city, 627 in General Santos City and 1,190 in Zamboanga City. It was decided that the reported figures of the three

sites be used instead of their rates from PDEA, while maintaining the PDEA estimates for the rest of the country. The estimates now ranged from 12,705 to 21,567 IDUs.

A review of the 2009, 2010 and 2011 IHBSS showed that around 10% of respondents had female partners who were also IDU. It was assumed then that 10% of the estimated number of IDUs were female, and 90% were male. Thus, in the IDU estimates, the percentage applied to the total adult male population (eg. 0.004%) includes the 90% males and the 10% females.

In 2000, the MENNSA study reported that 50.5% of respondents in this male survey had ever tried drugs, and 6.1% reported injecting drug use in their lifetime. This represents a gross overestimate if applied nationwide.

Table 1. National Population Size Estimates for Most At-Risk Populations by MARP, 2011

MARP	Low Estimate	Proportion to Total Population	High Estimate	Proportion to Total Population
MSM	390,733	1.70% of adult males	689,529	3.0% of adult males
IDU	12,304	0.03% of adult males	16,607	0.04% of adult males
Total FSW	70,167	0.31% of adult females	89,175	0.40% of adult females
*RFSW	54,485	0.24% of adult females	54,485	0.24% of adult females
*FFSW	15,682	0.07% of adult females	34,690	0.15% of adult females
Clients of FSW	436,702	1.90% of adult males	1,149,215	5.0% of adult males

**Adult population: individuals ages 15 to 49 years based on the 2007 Census of the National Statistics Office*

Table 2. National Population Size Estimates for Most At-Risk Populations by Area & MARP, 2011

Geographic Area	MARP	Low Estimate	High Estimate	Estimate used for EPP/Spectrum	Proportion to Total Population
Metro Manila	MSM	54,349	95,909	95,909	3.0% adult males
	IDU	626	1,252	1,252	0.04% adult males
	RFSW	15,008		15,008	0.04% adult females
	FFSW	2,388	7,504	7,504	0.22% adult females
	Clients of FSW	60,743	159,849	Added to remaining population	
Cebu province	MSM	17,084	30,149	30,149	3.0% adult males
	IDU	6,000	6,000	6,000	0.60% adult males
	RFSW	3,480		3,480	0.35% adult females
	FFSW	696	1,989	1,989	0.20% adult females
	Clients of FSW	19,094	50,248	Added to remaining population	
Rest of the Philippines	MSM	319,300	563,471	563,471	3.0% adult males
	IDU	5,678	9,355	9,355	0.05% adult males
	RFSW	35,996		35,996	0.20% adult females
	FFSW	12,599	25,198	25,198	0.14% adult females
	Clients of FSW	356,865	939,119	Added to remaining population	

Projections for People Living with HIV (PLHIV)

The UNAIDS software, EPP/Spectrum 2011, was used to create projections of the number of PLHIV until 2015. Projections include number of PLHIV, new HIV infections, and number in need of ART by year. Projection can be disaggregated by sub-epidemic, sub-population, and age groups.

The 2011 PLHIV Estimates involved the following steps:

Step 1: Define ART and MTCT parameters and treatment eligibility
Step 2: Define the population and the population sizes
Step 3: Enter surveillance data
Step 4: Run projections and fit curves
Step 5: Check female to male ratio against the Philippine HIV & AIDS Registry
Step 6: Get projection results

Step 1: Define ART and MTCT parameters and treatment eligibility

Data for treatment regimens, numbers on anti-retroviral therapy (ART), and maternal to child transmission (MTCT) were from the National AIDS and STI Prevention and Control Program (NASPCP) of the Department of Health.

The Department of Health began providing ART in 2004. There were patients on ART prior to 2004, however, they were not monitored by the DOH. Data on ART is available from 2005 to 2010 only.

The eligibility for treatment from 2005 to 2011 was a CD4 count equal to 200. Beginning in 2012, the eligibility for treatment will be CD4 = 350.

Table 3. Number of PLHIV receiving Anti-Retrovirals, NASPCP-DOH

Year	Total Enrolled	Adult Enrolled	Adult Regimen		Pedia Enrolled	Pediatric Regimen	
			1st Line ARV	2nd Line ARV		1st Line ARV	2nd Line ARV
2005	56	56	51	6	0	0	0
2006	204	204	187	17	0	0	0
2007	364	361	345*	23*	3	3	0
2008	569	569	512*	44*	13	13	0
2009	832	815	766	49	17	17	0
2010	1,274	1,254	1,180	74	20	20	0

*NASPCP will submit the correct numbers by next week

Step 2: Define the population and the population sizes

The HIV epidemic in the Philippines is concentrated among the most at-risk population (MARP), and is at different stages in different areas. The HIV prevalence in Metro Manila and Cebu is significantly higher than the rest of the Philippines. To account for these differences and capture the uniqueness of the HIV situation in these two areas, the country was divided into three geographic areas, namely Metro Manila, Cebu province, and the rest of the country.

The characteristics of each MARP in Cebu were defined differently than in Metro Manila and the Rest of the Philippines. MSM and Client of FSW components were added to the IDU characteristics, while an IDU component was added to the FSW characteristics.

Turnover was enabled for RFSW, FFSW and IDU, with their HIV prevalence added to the Remaining Population once they leave the Most At-Risk Population. The IDU population was assumed to be 90% male and 10% female, based on data of female IDU partners from IHBSS 2009, 2010 and 2011.

Table 4. MARP Size Percentages used in the Population page of EPP/Spectrum

	Total Population	MARP Size (High Estimates)	% of the Population used for EPP/Spectrum
Metro Manila	**6,607,978**		**14.559%**
MSM	3,196,974 (Male)	95,909	**0.211%**
IDU	3,196,974 (Male)	1,252	**0.003%**
RFSW	3,411,004 (Female)	15,008	**0.033%**
FFSW	3,411,004 (Female)	7,504	**0.017%**
Remaining Pop		6,488,297	**14.295%**
Cebu Province	**1,999,255**		**4.405%**
MSM	1,004,957 (Male)	30,149	**0.066%**
IDU	1,004,957 (Male)	6,000	**0.013%**
RFSW	994,298 (Female)	3,480	**0.008%**
FFSW	994,298 (Female)	1,989	**0.004%**
Remaining Pop		1,957,638	**4.313%**
Rest of Philippines	**36,780,602**		**81.036%**
MSM	18,782,370 (Male)	563,471	**1.241%**
IDU	18,782,370 (Male)	9,355	**0.021%**
RFSW	17,998,232 (Female)	35,996	**0.079%**
FFSW	17,998,232 (Female)	25,198	**0.056%**
Remaining Pop		36,146,609	**79.639%**

Step 3: Enter surveillance data

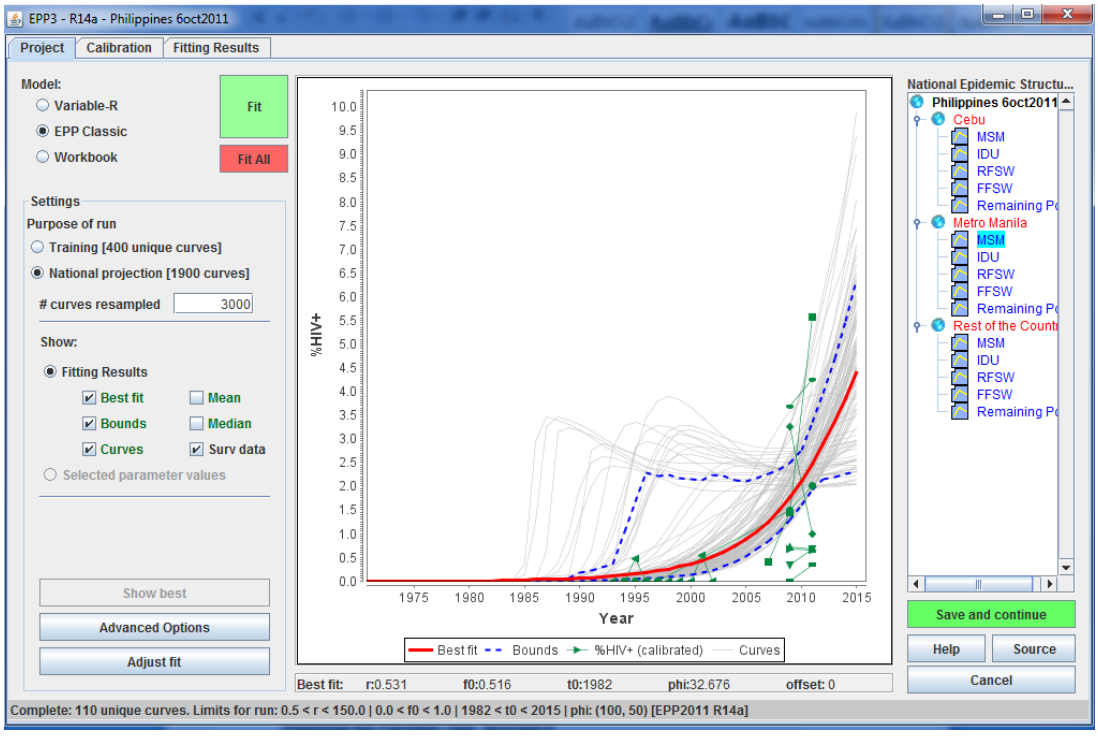
Prevalence data from 1993 to 2003 HIV Serologic Surveillance, and 2003 to 2011 Integrated HIV Behavioral and Serologic Surveillance, both conducted by the National Epidemiology Center of the Department of Health (NEC-DOH), were used.

There was a lack of data for the HIV prevalence of the remaining population. Since there are no national prevalence surveys of the general population nor surveillance in antenatal clinics, data from donated blood was used as a proxy. The National Voluntary Blood Service Program of the DOH provided data for 2006 to 2009. More recent data was not yet available. Since most blood donors were male, the positivity rate was halved to account for the females among OFWs and the other groups that represent the remaining populations.

Step 4: Run projections and fit curves

EPP Classic was used as the projection model. After the initial curve fit, HIV prevalence data from the IHBSS 2005, 2007, 2009, 2010, and 2011 were used to calibrate the projection. This was done by adjusting the Advanced Options of the Projection page. No further calibration was done in the Calibration page.

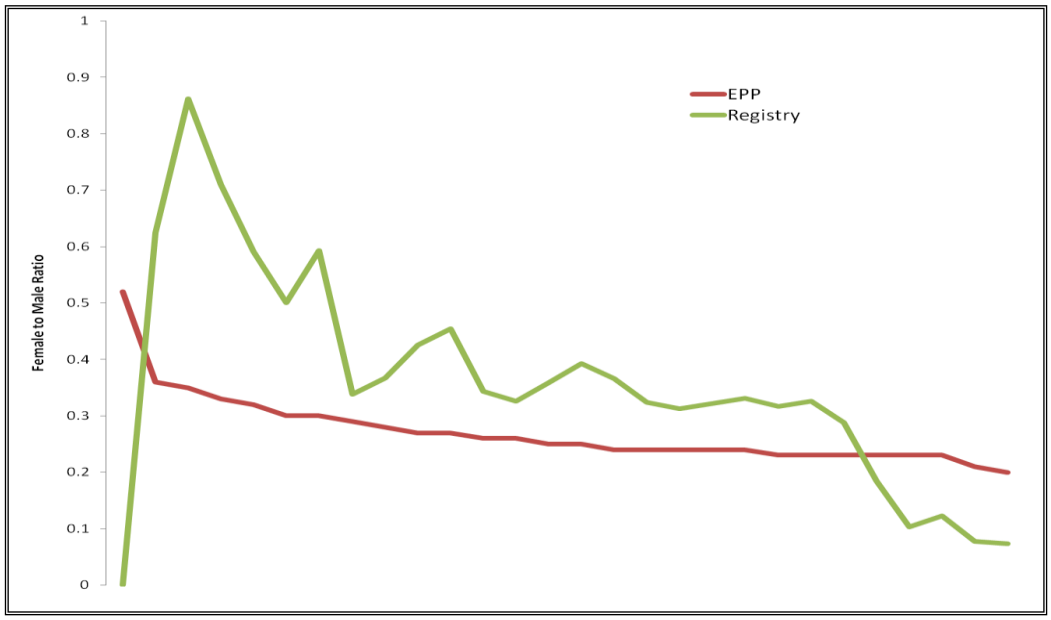
Figure 1. Metro Manila MSM Results in the Projection page of EPP/Spectrum



Step 5: Check female to male ratio of 15-49yo against the Philippine HIV & AIDS Registry

The projection had a similar general trend to what we have seen among reported HIV cases in the Registry from 1984 to 2011.

Figure 2. Comparison of Female to Male Ratio of Projection and HIV Registry, 1984-2011



Step 6: Get projection results

Figure 3. Projection of the Total Number of People Living with HIV in the Philippines, 2000-2015

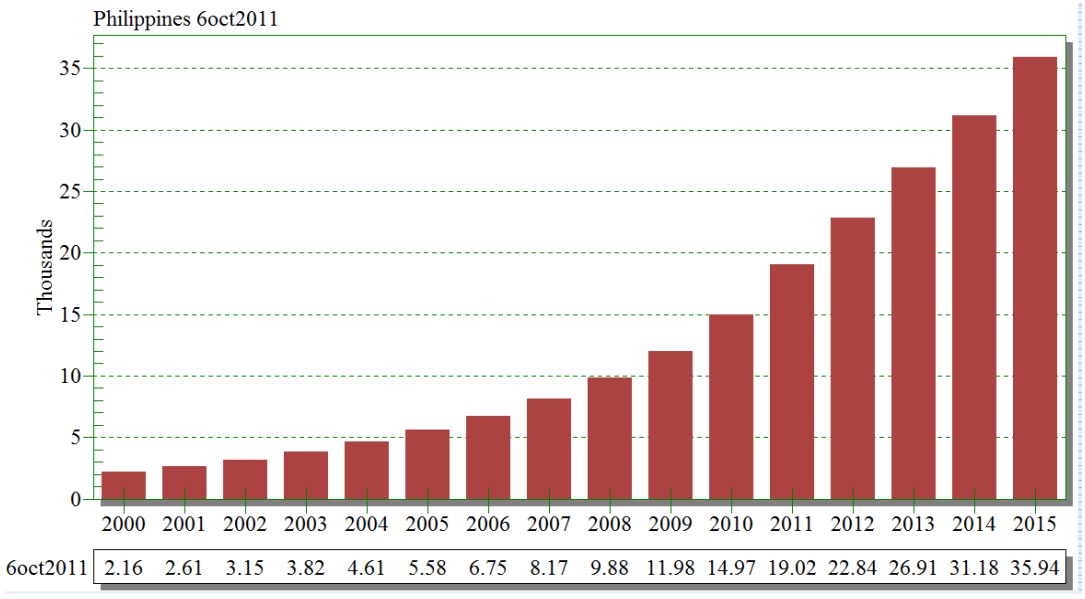


Figure 4. Projection of the Adult (15-49yo) HIV Prevalence in the Philippines, 2000-2015

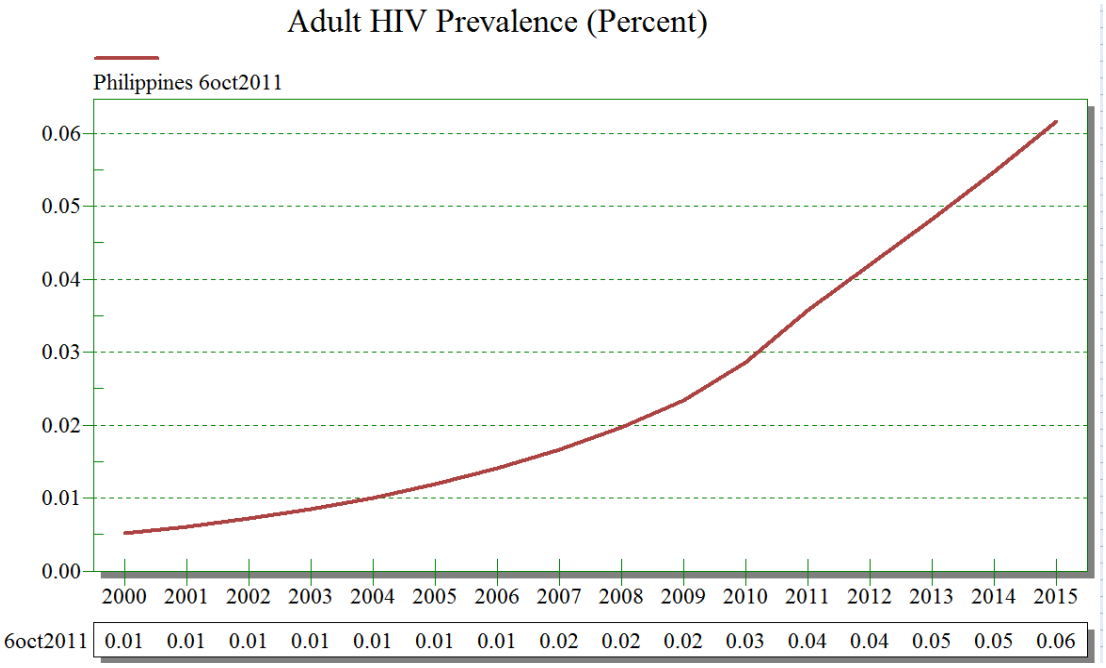


Figure 5. Projection of the Number of New Adult HIV Infections in the Philippines, 2000-2015

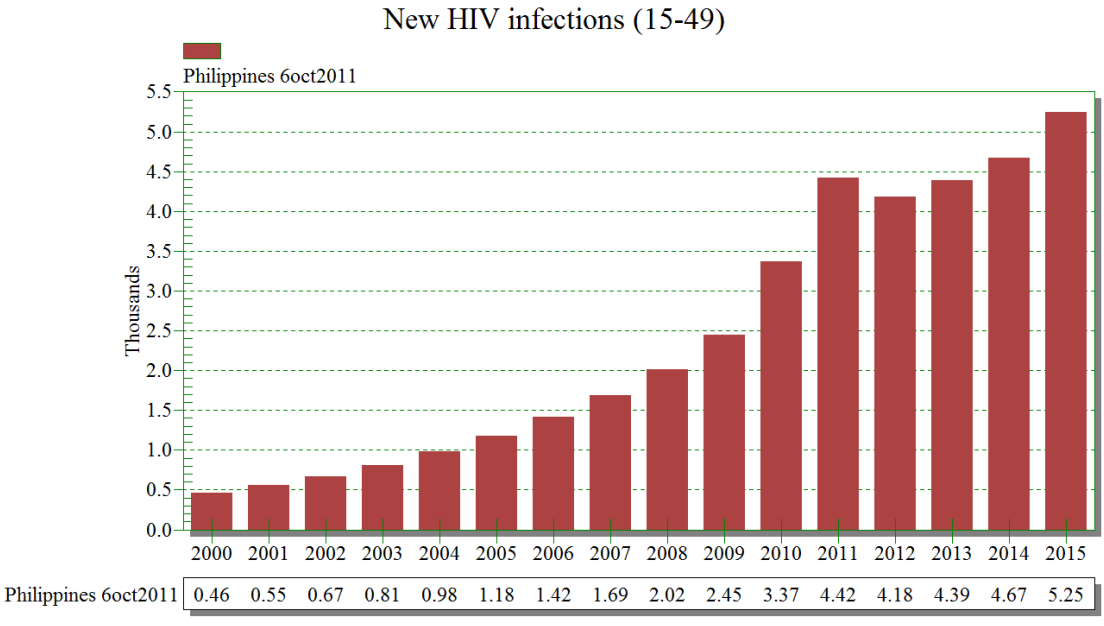
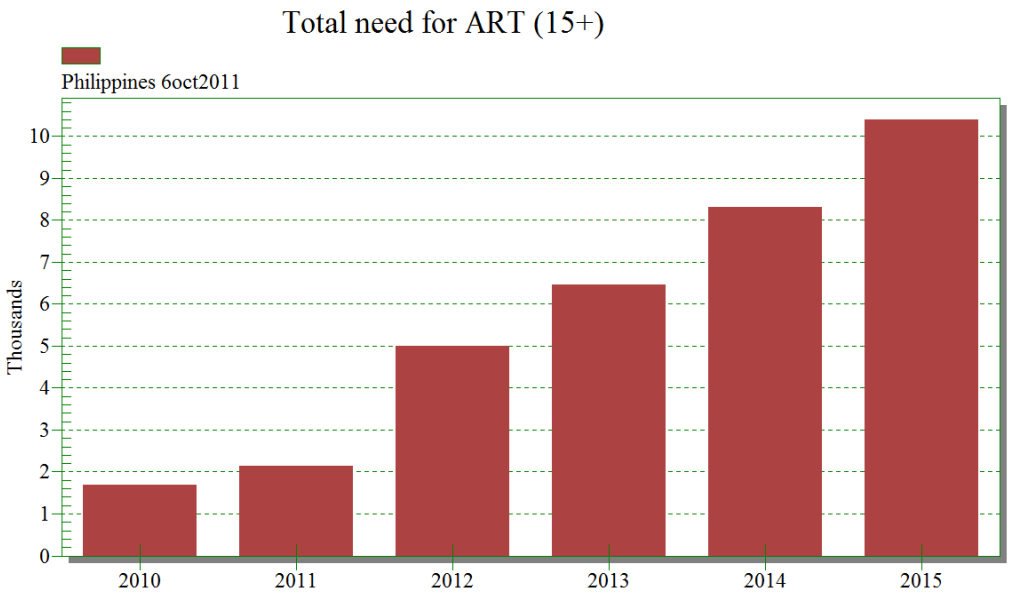
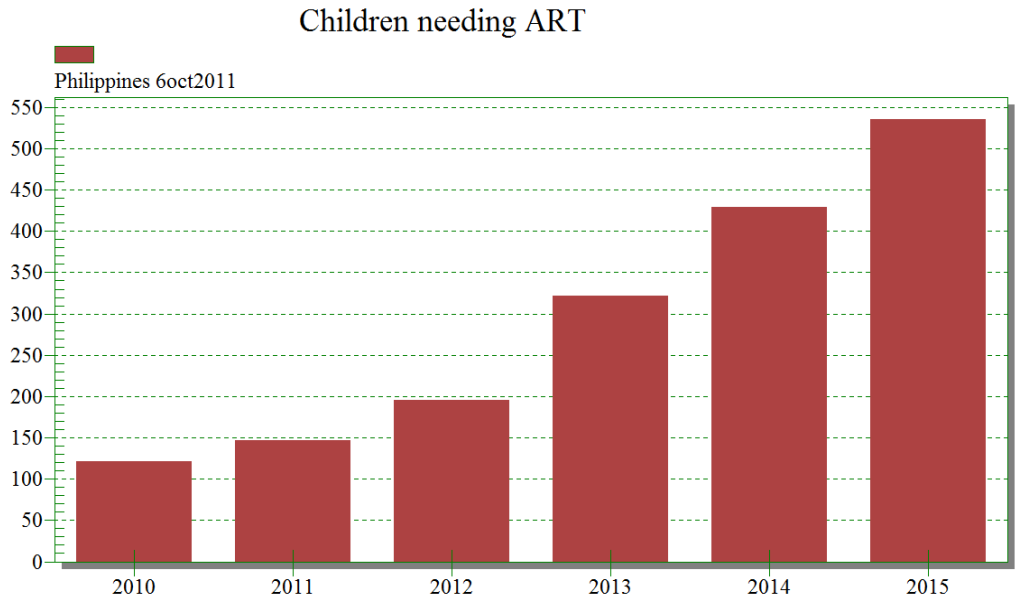


Figure 6. Projection of the Number of People, 15 years and Older, Needing ART in the Philippines, 2010-2015



	2010	2011	2012	2013	2014	2015
Philippines 6oct2011	1.69	2.14	4.99	6.46	8.30	10.40

Figure 7. Projection of the Number of Children less than 15 years Needing ART in the Philippines, 2010-2015



	2010	2011	2012	2013	2014	2015
Philippines 6oct2011	121.22	146.82	195.53	321.94	429.34	535.77

Table 5. Projected Total Number of PLHIV in the Philippines, 1980-2015

HIV/AIDS Projection – All Ages **Philippines 6oct2011**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
HIV population																		
Total	0	0	49	60	78	116	144	178	218	265	325	394	476	576	693	836	1,012	1,221
Male	0	0	41	49	61	89	109	135	164	200	246	300	364	443	535	649	790	957
Female	0	0	7	11	17	28	35	44	54	65	79	94	112	133	157	187	222	264
Prevalence (15-49)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003
New HIV infections																		
Total	0	0	49	12	20	41	32	41	49	60	75	89	107	130	152	186	228	271
Male	0	0	41	8	13	30	24	31	37	46	58	69	83	102	119	147	181	216
Female	0	0	7	4	7	11	8	10	12	14	17	20	24	28	32	39	47	55
Annual AIDS deaths																		
Total	0	0	0	1	1	2	4	6	8	11	14	17	21	26	31	38	45	55
Male	0	0	0	0	1	2	3	4	6	8	10	13	16	19	24	29	35	42
Female	0	0	0	0	0	0	1	1	2	2	3	4	5	6	7	9	10	12

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HIV population																		
Total	1,474	1,784	2,157	2,609	3,155	3,816	4,613	5,577	6,749	8,166	9,877	11,981	14,967	19,022	22,837	26,907	31,180	35,941
Male	1,161	1,410	1,711	2,077	2,518	3,053	3,699	4,481	5,430	6,577	7,961	9,668	12,132	15,509	18,617	21,914	25,369	29,218
Female	313	373	445	532	636	762	914	1,096	1,319	1,589	1,916	2,313	2,834	3,513	4,221	4,993	5,811	6,723
Prevalence (15-49)	0.004	0.004	0.005	0.006	0.007	0.009	0.010	0.012	0.014	0.017	0.020	0.023	0.029	0.036	0.042	0.048	0.055	0.062
New HIV infections																		
Total	329	400	482	584	704	852	1,028	1,242	1,493	1,776	2,118	2,574	3,530	4,625	4,383	4,617	4,919	5,526
Male	263	321	387	470	567	688	831	1,004	1,208	1,437	1,714	2,087	2,906	3,843	3,577	3,749	3,990	4,484
Female	66	80	95	114	136	164	197	237	285	339	404	486	624	781	806	867	929	1,042
Annual AIDS deaths																		
Total	66	80	97	117	141	170	206	248	288	319	360	415	482	495	477	441	523	625
Male	52	63	76	92	112	136	164	199	231	257	290	335	390	404	394	364	433	517
Female	15	17	21	25	29	35	42	50	57	62	70	80	92	90	84	77	91	107

Table 6. Projected Number of Adults (15-49yo) Living with HIV by Geographic Area and Population by 2015

Year = 2015 **Philippines 6oct2011**

	Philippines	Cebu\ MSM	Cebu\ IDU	Cebu\ RFSW	Cebu\ FFSW	Cebu\Remaining Pop	MM\ MSM	MM \IDU	MM\ RFSW	MM\ FFSW	MM\Remaining Pop	Rest\ MSM	Rest\ IDU	Rest\ RFSW	Rest\ FFSW	Rest\Remaining Pop
Adults 15-49																
HIV population																
Total	32,864	2,025	1,956	34	145	393	5,055	28	99	71	1,318	13,939	55	57	239	7,451
Male	26,776	1,650	1,593	28	118	320	4,119	23	81	58	1,074	11,357	45	46	195	6,070
Female	6,088	375	362	6	27	73	936	5	18	13	244	2,582	10	10	44	1,380
Prevalence	0.06	5.55	33.12	0.77	6.41	0.02	4.33	2.03	0.54	0.75	0.02	2.03	0.57	0.13	0.77	0.02
New HIV infections																
Total	5,250	324	312	5	23	63	808	4	16	11	211	2,227	9	9	38	1,190
Male	4,286	264	255	4	19	51	659	4	13	9	172	1,818	7	7	31	972
Female	964	59	57	1	4	12	148	1	3	2	39	409	2	2	7	218
Incidence	0.010	0.980	8.400	0.130	1.140	0.000	0.750	0.340	0.090	0.130	0.000	0.340	0.100	0.020	0.130	0.000
Annual AIDS deaths																
Total	531	33	32	1	2	6	82	0	2	1	21	225	1	1	4	120
Male	444	27	26	0	2	5	68	0	1	1	18	188	1	1	3	101
Female	88	5	5	0	0	1	13	0	0	0	4	37	0	0	1	20
Total number receiving ART	6,836	421	407	7	30	82	1,051	6	21	15	274	2,899	11	12	50	1,550
Total need for ART	8,752	539	521	9	39	105	1,346	7	26	19	351	3,712	15	15	64	1,984

Table 7. Projected Number of Children (0-14yo) Living with HIV by Geographic Area and Population by 2015

Year = 2015 **Philippines 6oct2011**

	Philippines	Cebu\ MSM	Cebu\ IDU	Cebu\ RFSW	Cebu\ FFSW	Cebu\Remaining Pop	MM\ MSM	MM \IDU	MM\ RFSW	MM\ FFSW	MM\Remaining Pop	Rest\ MSM	Rest\ IDU	Rest\ RFSW	Rest\ FFSW	Rest\Remaining Pop
Children 0-14																
HIV population																
Total	582	36	35	1	3	7	90	0	2	1	23	247	1	1	4	132
Male	298	18	18	0	1	4	46	0	1	1	12	127	0	1	2	68
Female	284	17	17	0	1	3	44	0	1	1	11	120	0	0	2	64
New HIV infections																
Total	126	8	7	0	1	2	19	0	0	0	5	53	0	0	1	28
Male	65	4	4	0	0	1	10	0	0	0	3	27	0	0	0	15
Female	61	4	4	0	0	1	9	0	0	0	2	26	0	0	0	14
Annual AIDS deaths																
Total	23	1	1	0	0	0	4	0	0	0	1	10	0	0	0	5
Male	12	1	1	0	0	0	2	0	0	0	0	5	0	0	0	3
Female	11	1	1	0	0	0	2	0	0	0	0	5	0	0	0	3

Table 8. Projected Number of PLHIV Needing ART in the Philippines by Age-Group, Sex and Year, 2010-2015

	2010			2011			2012			2013			2014			2015		
Age Groups	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
0-4	98	50	48	119	61	58	160	82	78	264	136	129	354	181	172	442	227	215
5-9	15	8	8	19	10	9	25	13	12	41	21	20	56	29	27	71	36	35
10-14	8	4	4	9	5	4	11	5	5	17	8	8	19	10	9	23	12	11
15-19	4	3	1	5	3	2	50	36	14	66	48	18	78	56	22	85	60	24
20-24	61	44	17	74	54	20	375	277	98	467	347	120	578	431	147	695	519	176
25-29	175	132	43	216	163	53	684	525	159	858	660	197	1,071	826	245	1,308	1,009	299
30-34	229	180	50	288	226	63	769	613	156	977	780	197	1,239	990	249	1,539	1,229	310
35-39	294	243	51	370	305	64	875	732	144	1,126	942	184	1,437	1,203	234	1,783	1,492	291
40-44	318	268	49	403	341	62	842	715	127	1,096	931	164	1,420	1,209	212	1,792	1,525	266
45-49	298	252	46	379	321	58	712	605	107	938	798	140	1,226	1,045	181	1,551	1,323	228
50-54	198	167	31	257	217	40	438	370	68	587	497	90	785	666	119	1,020	866	154
55-59	80	67	12	106	90	17	177	150	27	242	205	37	330	280	50	440	373	67
60-64	26	23	3	35	31	4	58	51	6	80	71	9	111	98	13	151	133	18
65-69	5	5	0	7	7	1	11	10	1	16	15	1	23	21	2	33	30	3
70-74	1	1	0	1	1	0	1	1	0	2	2	0	3	3	0	5	5	0
75-79	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	0
80+	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	2	2	0
Total 15+	1,689	1,386	303	2,142	1,758	383	4,994	4,087	907	6,456	5,299	1,158	8,305	6,831	1,473	10,403	8,567	1,836
Total <15yo	121	62	60	147	76	71	196	100	95	322	165	157	429	220	208	536	275	261
Total	**1,810**	**1,447**	**363**	**2,288**	**1,835**	**455**	**5,190**	**4,186**	**1,002**	**6,779**	**5,463**	**1,314**	**8,732**	**7,050**	**1,682**	**10,941**	**8,842**	**2,097**

Table 9. Summary of Population and Demographic Characteristics used in the Philippine EPP/Spectrum Projections, 1980-2015

(demographic input is based on estimates and projections of the United Nations Development Program)

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Fertility									
Input TFR	5.22	5.12	5	4.91	4.83	4.75	4.67	4.59	4.51
Mean Age of Childbearing	30.3	30.3	30.2	30.1	30.1	30	30	29.9	29.8
Child-woman ratio	0.69	0.68	0.67	0.66	0.66	0.65	0.64	0.64	0.63
Mortality									
Male LE	59.1	59.5	59.9	60.3	60.7	61.2	61.6	62	62.4
Female LE	63	63.5	63.9	64.4	64.8	65.3	65.7	66.1	66.5
Total LE	61.1	61.5	61.9	62.3	62.8	63.2	63.6	64	64.4
Vital Rates									
CBR per 1000	36.2	35.8	35.4	35.1	34.8	34.5	34.2	33.9	33.5
CDR per 1000	8.6	8.4	8.2	8	7.8	7.6	7.4	7.3	7.1
Annual births and deaths									
Births	1,739,329	1,767,094	1,794,304	1,825,505	1,860,520	1,893,137	1,925,829	1,957,716	1,985,875
Deaths	413,022	414,127	415,045	415,799	416,404	417,096	418,216	419,107	418,991
Population									
Total	48,034,488	49,342,763	50,685,129	52,055,841	53,448,966	54,862,018	56,294,642	57,746,264	59,211,464
Male	24,213,390	24,874,933	25,553,714	26,246,629	26,950,488	27,664,232	28,387,565	29,120,196	29,859,275
Female	23,821,098	24,467,830	25,131,415	25,809,213	26,498,478	27,197,786	27,907,077	28,626,068	29,352,188
Percent 0-4	16.12	16	15.87	15.75	15.64	15.53	15.43	15.34	15.25
Percent 5-14	26.82	26.56	26.36	26.23	26.14	26.1	25.98	25.86	25.76
Percent 15-24	20.66	20.76	20.8	20.78	20.7	20.57	20.5	20.43	20.34
Percent 15-49	47.36	47.72	48.01	48.23	48.38	48.47	48.64	48.79	48.93
Percent 15-64	53.86	54.23	54.55	54.82	55.02	55.17	55.38	55.58	55.76
Percent 65 and over	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.23	3.24
Percent females 15-49	47.05	47.42	47.72	47.96	48.12	48.23	48.4	48.56	48.7
Sex ratio	101.65	101.66	101.68	101.69	101.71	101.72	101.72	101.73	101.73
Median age	18	18	18	19	19	19	19	19	19

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Fertility									
Input TFR	4.43	4.34	4.26	4.18	4.1	4.02	3.94	3.85	3.77
Mean Age of Childbearing	29.7	29.6	29.5	29.4	29.4	29.3	29.3	29.2	29.2
Child-woman ratio	0.63	0.62	0.61	0.6	0.59	0.58	0.57	0.56	0.55
Mortality									
Male LE	62.8	63.3	63.7	64.2	64.6	65	65.5	65.9	66.3
Female LE	67	67.4	67.9	68.4	68.8	69.2	69.7	70.1	70.4
Total LE	64.9	65.3	65.8	66.3	66.7	67.1	67.5	68	68.3
Vital Rates									
CBR per 1000	33.1	32.6	32.2	31.7	31.2	30.6	30	29.4	28.8
CDR per 1000	6.9	6.7	6.5	6.3	6.1	6	5.8	5.7	5.5
Annual births and deaths									
Births	2,010,021	2,029,538	2,047,167	2,063,568	2,075,145	2,082,643	2,088,480	2,092,588	2,095,405
Deaths	417,750	415,891	413,552	410,829	408,583	406,909	405,022	403,111	402,313
Population									
Total	60,684,651	62,161,815	63,641,549	65,123,008	66,609,589	68,105,341	69,608,815	71,118,308	72,631,415
Male	30,601,860	31,345,897	32,090,663	32,835,715	33,583,173	34,335,480	35,091,861	35,851,475	36,613,052
Female	30,082,791	30,815,918	31,550,886	32,287,293	33,026,417	33,769,862	34,516,954	35,266,834	36,018,362
Percent 0-4	15.14	15.02	14.88	14.73	14.56	14.37	14.17	13.96	13.74
Percent 5-14	25.67	25.58	25.5	25.42	25.34	25.26	25.17	25.07	24.96
Percent 15-24	20.25	20.17	20.03	19.94	19.91	19.92	19.97	19.97	19.98
Percent 15-49	49.06	49.19	49.32	49.45	49.59	49.75	49.92	50.12	50.32
Percent 15-64	55.95	56.15	56.38	56.61	56.86	57.12	57.39	57.67	57.95
Percent 65 and over	3.24	3.25	3.24	3.24	3.24	3.24	3.27	3.3	3.35
Percent females 15-49	48.83	48.97	49.12	49.26	49.42	49.59	49.78	49.99	50.22
Sex ratio	101.73	101.72	101.71	101.7	101.69	101.67	101.67	101.66	101.65
Median age	19	19	20	20	20	20	20	20	20

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Fertility									
Input TFR	3.69	3.61	3.54	3.46	3.38	3.32	3.27	3.23	3.18
Mean Age of Childbearing	29.2	29.1	29.1	29	29	28.9	28.9	28.9	28.9
Child-woman ratio	0.54	0.53	0.52	0.51	0.5	0.49	0.48	0.47	0.47
Mortality									
Male LE	66.6	66.9	67.2	67.6	67.9	68.2	68.4	68.7	68.9
Female LE	70.8	71.1	71.5	71.9	72.2	72.6	72.9	73.2	73.5
Total LE	68.7	69	69.4	69.7	70	70.4	70.6	70.9	71.2
Vital Rates									
CBR per 1000	28.3	27.8	27.3	26.8	26.3	25.9	25.7	25.4	25.1
CDR per 1000	5.4	5.3	5.2	5.1	5.1	5	5	4.9	4.9
Annual births and deaths									
Births	2,099,198	2,104,147	2,108,591	2,111,107	2,111,593	2,120,538	2,138,605	2,156,548	2,172,953
Deaths	402,382	403,140	404,031	405,038	406,135	408,657	412,641	416,727	420,848
Population									
Total	74,148,245	75,669,265	77,193,837	78,719,915	80,245,383	81,777,274	83,323,245	84,883,074	86,455,186
Male	37,376,344	38,141,411	38,907,905	39,674,754	40,440,848	41,209,776	41,985,435	42,767,655	43,555,581
Female	36,771,901	37,527,854	38,285,932	39,045,160	39,804,536	40,567,498	41,337,810	42,115,419	42,899,605
Percent 0-4	13.51	13.29	13.07	12.86	12.66	12.46	12.29	12.13	11.99
Percent 5-14	24.83	24.68	24.49	24.29	24.05	23.79	23.51	23.22	22.92
Percent 15-24	20	20.03	20.06	20.09	20.12	20.14	20.16	20.17	20.16
Percent 15-49	50.54	50.76	50.97	51.17	51.36	51.55	51.72	51.89	52.05
Percent 15-64	58.24	58.56	58.89	59.25	59.62	60	60.38	60.75	61.1
Percent 65 and over	3.41	3.47	3.54	3.61	3.67	3.74	3.82	3.9	3.98
Percent females 15-49	50.46	50.69	50.9	51.1	51.29	51.47	51.63	51.78	51.93
Sex ratio	101.64	101.63	101.62	101.61	101.6	101.58	101.57	101.55	101.53
Median age	21	21	21	21	21	22	22	22	22

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fertility									
Input TFR	3.13	3.08	3.03	2.98	2.93	2.88	2.83	2.79	2.75
Mean Age of Childbearing	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.7
Child-woman ratio	0.46	0.45	0.45	0.44	0.44	0.43	0.43	0.42	0.41
Mortality									
Male LE	69.2	69.4	69.7	69.9	70.1	70.4	70.6	70.8	71
Female LE	73.8	74	74.3	74.6	74.8	75.1	75.3	75.5	75.7
Total LE	71.5	71.7	72	72.2	72.5	72.7	72.9	73.1	73.3
Vital Rates									
CBR per 1000	24.9	24.5	24.2	23.9	23.5	23.1	22.8	22.5	22.2
CDR per 1000	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.8	4.8
Annual births and deaths									
Births	2,187,777	2,199,743	2,208,373	2,215,601	2,220,227	2,222,131	2,226,091	2,231,991	2,235,595
Deaths	425,056	430,015	435,852	442,069	448,556	455,482	463,381	472,004	480,708
Population									
Total	88,037,912	89,628,568	91,223,865	92,822,018	94,420,160	96,015,125	97,606,690	99,194,772	100,776,988
Male	44,348,333	45,145,721	45,947,254	46,752,003	47,558,499	48,365,246	49,171,065	49,974,657	50,774,832
Female	43,689,579	44,482,846	45,276,611	46,070,015	46,861,661	47,649,879	48,435,625	49,220,115	50,002,156
Percent 0-4	11.88	11.76	11.64	11.52	11.38	11.23	11.09	10.94	10.8
Percent 5-14	22.61	22.3	22.01	21.74	21.48	21.25	21.03	20.83	20.63
Percent 15-24	20.15	20.11	20.05	19.96	19.85	19.72	19.57	19.4	19.22
Percent 15-49	52.2	52.34	52.46	52.57	52.67	52.75	52.81	52.85	52.88
Percent 15-64	61.44	61.77	62.09	62.4	62.7	62.99	63.26	63.51	63.72
Percent 65 and over	4.07	4.16	4.26	4.35	4.43	4.52	4.62	4.73	4.85
Percent females 15-49	52.07	52.19	52.3	52.39	52.47	52.52	52.56	52.58	52.59
Sex ratio	101.51	101.49	101.48	101.48	101.49	101.5	101.52	101.53	101.55
Median age	23	23	23	23	24	24	24	24	25

Annex A. Previous MARP Estimates

Table 9. National Size Estimates for Most At-Risk Population, 2007

Table 9: Final Size Estimates of Most-At-Risk- Populations in the Philippines generated at the Workshop

Most-at-Risk-Populations)	Estimated number of people:		Average % of adults	Asian Average
	Low range	HIGH range		
Establishment-based Female Sex Workers	*70,000*	*76,000*	0.3% females	
Freelance (Street) Female Sex Workers	*72,000*	*119,000*	0.3 – 0.5% females	
Average of low estimates and high estimates	140,000	180,000	0.6 – 0.9% females	0.2-0.8%
Clients of Female Sex Workers	400,000	1,500,000	2 – 7% males	5-20%
Injection Drug Users	10,000	20,000	0.02 – 0.05% adults	0.1-1%
Men who have Sex with Men	200,000	670,000	1 - 3% males	2-5%
Overseas Filipino Workers	500,000	500,000	1.1% adults	

Table 10. National Size Estimates for Most At-Risk Population, 2009

MOST AT-RISK POPULATION	Population Size Estimates (Low)	Population Size Estimates (High)
Males who have Sex with Males (MSM)	**390,733** (1.70% of adult male population)	**689,529** (3.0% of adult male population)
Injecting Drug Users (IDU)	**12,705** (0.03% of total adult population)	**21,567** (0.05% of total adult population)
Female Sex Workers (FSW)	**109,731** (0.49% of adult female population)	**125,661** (0.56% of adult female population)
• **Based in SHC registered establishments (RFSW)**	**94,049** (0.42% of adult female population)	
• **Freelance (FFSW)**	**15,682** (0.07% of adult female population)	**31,612** (0.14% of adult female population)
Clients of Female Sex Workers	**436,702** (1.90% of adult male population)	**1,149,215** (5.0% of adult male population)

References

1. Philippine National AIDS Council. Follow-up to the Declaration of Commitment on HIV and AIDS United Nations General Assembly Special Session (UNGASS). Country Report of the Philippines January 2006 to December 2007. Manila: Philippine National AIDS Council, 2008.
2. Philippine HIV and AIDS Registry. Manila, Philippines: NEC-DOH, 1984-2011.
3. Joint United Nations Programme on HIV/AIDS (UNAIDS). A scaled-up response to AIDS in Asia and the Pacific, UNAIDS, Bangkok. UNAIDS/05.15E, 2005.
4. UNAIDS Reference Group on Estimates, Modelling and Projections. Modelling the expected short term distribution of incidence of HIV infections by exposure group, Available at http://www.unaids.org.
5. E Gouws, P J White, J Stover, T Brown. Short term estimates of adult HIV incidence by mode of transmission: Kenya and Thailand as examples. Sex Transm Infect 2006;82(Suppl III):iii51–iii55. doi: 10.1136/sti.2006.020164.
6. Morgan M, Walker N, Gouws E, Stanecki KA, Stover J. Improved plausibility bounds about the 2005 HIV and AIDS estimates. Sex Transm Infect. 2006 Jun;82 Suppl 3:iii71-77.
7. Report of the 2009 Integrated HIV Behavioral and Serological Survey. Manila, Philippines: NEC-DOH, 2010. Unpublished.
8. 2007 Estimates of Adult Living with HIV in the Philippines. Manila, Philippines: NEC-DOH.
9. J Vandepitte, R Lyerla, G Dallabetta, F Crabbé, M Alary, A Buvé. Estimates of the number of female sex workers in different regions of the world. Sex Transm Infect 2006;82:iii18-iii25 doi:10.1136/sti.2006.020081
10. USAID HIV/AIDS Health Profile: Philippines. Pasay City: USAID/Philippines, 2008.
11. RJ Mateo, MC Lim-Quizon. HIV surveillance among female sex workers in the Philippines. Presented at: International AIDS Conference, Barcelona, Spain (2002 July 7-12).
12. E Gacad, N Maclang, F Paladin, O Monzon. HIV seroprevalence and associated risk factors among female sex workers in entertainment establishments in Bulacan Province, Philippines. Presented at: International AIDS Conference, Berlin, Germany (1993 June 6-11).
13. Wi TEC, Ramos, Epi R, Steen R, et al. Enhanced STI Control in Angeles City, Philippines. FHI: 2000.
14. Wi T, Ramos ER, Steen R, Esguerra TA, Roces MCR, Lim-Quizon MC, Neilsen G, Dallabetta G. STI declines among sex workers and clients following outreach, one time presumptive treatment, and regular screening of sex workers in the Philippines. Sex Transm Inf 2006;82;386-391.

15. MM Ronquillo, R Almeyda, G Praiso, P Resurreccion, J Fleras. A study on condom use among female sex workers in Pasay City, Manila. Presented at: International AIDS Conference, Vancouver, Canada (1996 July 7-12).
16. CH Carabana. 5th HIV/AIDS serologic surveillance among female sex workers in Zamboanga City, Philippines. International AIDS Conference, Barcelona, Spain (2002 July 7-12).
17. Hayes CG, Manaloto CR, Basaca-Sevilla V, Padre LP, Laughlin LW, O'Rourke TF, Espinosa GE, Andrada AB, Mejia P, Cano D. Epidemiology of HIV infection among prostitutes in the Philippines. J Acquir Immune Defic Syndr 1990;3(9):913-20.
18. Ditangco RA. HIV/AIDS in the Philippines. J AIDS Res 2006;8:12-16.
19. Liu TI, So R. Knowledge, attitude, and preventive practice survey regarding AIDS comparing registered to freelance commercial sex workers in Iloilo City, Philippines. Southeast Asian J Trop Med Public Health 1996 Dec;27(4):696-702.
20. Wi TEC, Saniel OP, Ramos ER, MacNeil J, Neilsen G. RTI/STI Prevalence in Selected Sites in the Philippines. FHI, 2002. Available at: http://www.fhi.org/NR/rdonlyres/esyhqgggrtf2coxaeqmoh3s6u4gnu4ii54roeq5zsvk5mvgmp7pawawp7bb7nekngsg2ebeq62zqmc/RTISTIPrevalence120502.pdf
21. Behavioral monitoring surveys: 2002 Results and trend analysis. Manila: Programs for Appropriate Technology in Health, 2002.
22. L D'Agnes, C Aquino, R Montebon. Validating the effectiveness of the Philippines HIV prevention program. Presented at: International AIDS Conference, Bangkok, Thailand (2004 July 11-16)
23. 2003 National Demographic and Health Survey. Manila: National Statistics Office, 2004.
24. Balk D, Cruz G, Brown T. HIV/AIDS Risk in the Philippines: Focus on Adolescents and Young Adults. Honolulu: East-West Center, October 1997.
25. Ramos-Jimenez P, Lee R. Male Sexual Risk Behavior and HIV/AIDS: A Survey in Three Philippine Cities. 2000. Available online at www.fhi.org/en/HIVAIDS/pub/survreports/philippinesexbehavior.htm.
26. Brown T. *HIV/AIDS in Asia*. In: Analysis from the East-West Center. Honolulu: East-West Center. 2003.
27. Tiglao TV, Tempongko SB. Knowledge, Attitudes, Beliefs and Practices Related to HIV and AIDS ofthe General Population (Metro Manila). Manila: UP College of Medicine, 1991.
28. MAP Report, 2005: Sex work in Asia.
29. Report on HIV Sentinel Surveillance in Cambodia, 2006. Phnom Penh: National Center for HIV/AIDS, Dermatology, and Sexually Transmitted Diseases (NCHADS), 2006.
30. National Voluntary Blood Safety Program data, 2008.

31. Morisky DE, Ang A, Coly A, Tiglao TV. A model HIV/AIDS risk reduction programme in the Philippines: a comprehensive community-based approach through participatory action research. Health Promot Int 2004: 19(1): 69-76. doi:10.1093/heapro/dah109
32. Raymundo CM, et al. (eds.). Adolescent Sexuality in the Philippines. Quezon City: UP Office of the Vice Chancellor for Research and Development, 1999.
33. D Morisky, TV Tiglao, J Baltazar, R Detels, C Sneed. The effects of peer counseling on STD risk-behaviors among heterosexual males in the Philippines. Presented at: International AIDS Conference, Durban, South Africa (2000 July 9-14).
34. Technical Report on Conduct of the 2008 National Household Survey on the Nature and Extent of Drug Abuse in the Philippines. Dangerous Drugs Board, December 2008.
35. Reid, G. & the Asian Harm Reduction Network (AHRN), The Hidden Epidemic: A Situation Assessment of Drug Use in South East and East Asia in the Context of HIV Vulnerability, AHRN, February 1998.
36. STI/HIV/AIDS Surveillance Report - October 1997. WHO/WPRO. Issue N.10. October 1997.
37. 1997 HIV/AIDS Sentinel Surveillance in the Philippines: Technical Report. Manila: Department of Health, 1997.
38. 2000 HIV/AIDS Sentinel Surveillance in the Philippines: Technical Report. Manila: Department of Health, 2000.
39. 2005 HIV/AIDS Sentinel Surveillance in the Philippines: Technical Report. Manila: Department of Health, 2005.
40. Amadora-Nolasco F, Alburo RE, Aguilar EJ, Trevathan WR. Knowledge and perception of risk for HIV and condom use among male injecting drug users in Cebu City, Philippines. Drug Alcohol Rev. 2002 Jun;21(2):137-43.
41. Fleras J. A Peer-led HIV/AIDS Education and Empowerment Program Targeting Members of University Fraternities and Sororities. Canberra: Australian International Development Assistance Bureau, 1993.
42. Men who have Sex with Men (MSM) – Update for ICAAP, Bali, 2009: Philippines. August 2009. Available at: www.aidsdatahub.org.
43. MAP Report, 2005: Male to male sex and HIV/AIDS in Asia.
44. MV Gumayan, GC Leysa, VB Buenjemia, JD Doligosa, III, DP Cataluna, LM Zerrudo, ND Abioda, AG Geresola (KRHC/CPU Iloilo City, Philippines). Knowledge about STD/HIV/AIDS and sexual behaviors of MSMs in Iloilo City, Philippines. International AIDS Conference, Barcelona, Spain (2002 July 7-12).
45. ABC's Survey of Self-identified Gay Men. Makati: PATH Foundation Philippines, Inc. 1998.

46. 2007 HIV/AIDS Sentinel Surveillance in the Philippines: Technical Report. Manila: Department of Health, 2007.
47. Unpublished 2007 data from the Philippine Overseas Employment Authority.
48. Gwatkin D. *et al*. *Socioeconomic differences in health, nutrition, and population in Philippines.* Washington, D.C.: World Bank, 2007b.
49. Manalastas EJ. Young Filipino Men's Condom Use During Their Most Recent Heterosexual Sex. Quezon City: University of the Philippines Diliman, October 2005.
50. AI Gabriel, T Badoy, C Dominguez. Detection of HIV infection in the armed forces of the Philippines. International AIDS Conference, Vancouver, Canada (1996 July 7-12).