



ROUND 1, 2005-06

SUMMARY REPORT - SIND

INTEGRATED BIOLOGICAL & BEHAVIORAL SURVEILLANCE

NATIONAL AIDS CONTROL PROGRAM

SIND AIDS CONTROL PROGRAM

CANADA – PAKISTAN HIV/AIDS SURVEILLANCE PROJECT

May 2006

2005 - 06

ROUND 1 SUMMARY REPORT - SIND

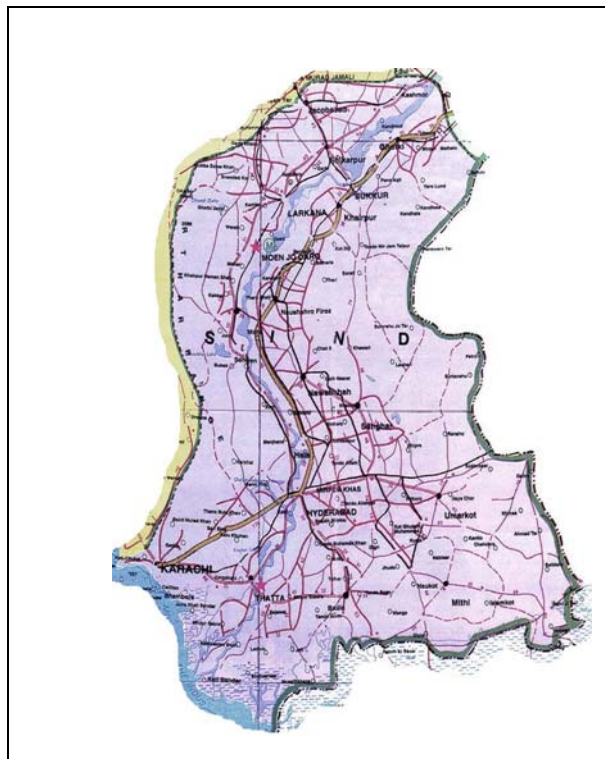
KARACHI , HYDERABAD, SUKKUR

1. INTRODUCTION

The findings presented here are part of the round one surveillance activities carried out in 08 cities of Pakistan by the National AIDS control Program (NACP) through its HIV/AIDS Surveillance Project (HASP). The primary goal of this research is to estimate and map the various HIV high risk groups in Pakistan, including injection drug users (IDUs) and commercial sex workers (CSWs); estimate prevalence of HIV infection and collect behavioral data for monitoring of the epidemic and its associated risk factors in the country.

Sindh is the second largest province of Pakistan with a population of 34.2 million (2003). About 50% population in the province lives in rural area. Three cities were selected: Karachi, Hyderabad & Sukkur. However Sukkur is closely connected with Rohri as well as Panno Aqil and Saleh Pat. The last two are medium size rural towns and because of their close connection with Sukkur they were also included in this surveillance round. Karachi is the largest city of the country and also the epicenter of majority of economic activities with two developed sea port. Its estimated population is approximately 12 million. The city also attracts multitude of people from all across the country for economic opportunities. Hyderabad is the second largest city of the province and after Karachi it caters social and medical needs of the province. Sukkur is the third largest city. Its significance is the extensive barrage system and it also is the most important city for all of northern Sindh.

Sindhi is the pre dominant ethnicity in the province followed by Urdu speaking community which migrated from India after independence of Pakistan. However Sindh is one of the only provinces in the country which has a high proportional presence of majority of ethnicities present in the country.



2. THE MAPPING STUDY

Geographic mapping was conducted to identify hot spots where high risk groups congregate, determine their estimate and derive a sampling strategy for integrated behavioral and biological surveillance (IBBS).

In Karachi, 20% results i.e. hot spots and estimates Karachi pilot mapping were validated. The eighteen towns of the city including Defense Housing Authority (DHA) were used as zones (except for cantt areas).

Hyderabad was divided into 11 zones and Sukkur into five different zones. Pre-mapping exercise in Sindh began from 7th September, 2005. Data collection in the three cities was completed from 10-30 September 2005. Data were collected from Secondary and Tertiary Key Informants at Level 01, the information was compiled and latter validated in level 2 and through a process of triangulation.

2.1 Mapping Results

- The pilot mapping study in Karachi had found 38,097 persons involved in the high risk activities at 1230 spots in the 18 towns of City District Government and Defence Housing Authority. 20% of these spots were revalidated in Round 1 of Surveillance. IDUs had the largest proportion of 32% followed by FSWs (30%), ESWs (23%) and MSWs (15%) in Karachi.
- In Hyderabad 4026 high risk groups were identified in 208 spots. FSWs comprised the largest proportion of 43.4% followed by IDUs (24.9%), MSWs (17.2%) and ESWs (14.4%).
- In Sukkur 4688 high risk groups were estimated at 212 spots. IDUs were the largest high risk group with 47.6% representation followed by FSWs (36.6%), MSWs (8.5%) and ESWs (7.1%).

2.1.1 Injection Drug users

- In Karachi 12,282 IDUs were estimated. The top three towns with largest concentration of IDUs were Saddar (20.1%), Lyari (9.7%) and SITE (8.7%) at 205 different hot spots.
- In Hyderabad 1003 IDUs were estimated. The top three zones with highest number of concentration of IDUs were Zones 7 (25.4%; from New Total petrol pump to Faqir ka pir), Zone 1 (7%; from Circuit house to Mussarat Hall in Latifabad no. 6) and Zone 6 (13.7%; from City gate hotel to Tillak Chari).
- In Sukkur 2234 IDUs were estimated. Highest number of IDUs was in new Sukkur (66.2%) followed by old Sukkur (12.1%).

2.1.2 Female Sex Workers

- In Karachi 11,546 FSWs were estimated. Street based FSWs 5815. Home or *kothikhana* based FSWs were 5616 and there was one brothel where 123 FSWs were present. Town wise Baldia had the highest (18.5%) concentration of FSWs followed by Lyari (10.2%) and DHA (9.9%).
- In Hyderabad 1026 FSWs were estimated. Street based FSWs were 1026, home or *kothikhana* 587 and 136 in brothel. Zone 7 had 15.2% FSWs followed by Zone 1 with 14.6% concentration and Zone 6 had 14.1% FSWs in the city.
- In Sukkur 1689 FSWs were estimated. Street based FSWs were 935 and home of *kothikhana* based were 754. New Sukkur constituted the highest (51.4%) proportion of FSWs followed by Old Sukkur with 16.2%.

2.1.3 Male Sex Workers (MSWs)

- In Karachi estimated MSWs were 5,687 comprising 15% of all high risk groups in the city. Town wise Saddar had 23.6% followed by Lyari (12.9%) and Bin Qasim (10.6%).
- In Hyderabad 694 MSWs were estimated. Zone 5 (Aga Khan Hospital to Bhens Colony) had the highest proportion with 22.6% followed by Zone 1 with 15.9% and Zone 3 (Caltex pump at Wadhawa to Marvi town) had 13.8% MSWs.
- In Sukkur 399 MSW were estimated. New Sukkur had 50.1% of all MSWs in the city followed by Old Sukkur with 20.3%.

2.1.4 Eunuch Sex Workers / Hijray

- In Karachi 8,582 ESWs were estimated. Balida town had the highest proportion with 22.3% representation followed by Bin Qasim town with 9.9% and Lyari with 8.9% ESWs in the city.
- In Hyderabad 580 ESWs were estimated. Zone 7 had 24.4% ESWs followed by Zone 9 (from Tilak Chari to Badin Stop) which had 17.7% representation and Zone 1 constituted 13.9% ESWs.
- There were 337 ESWs in Sukkur. New Sukkur had the highest concentration with 64.6% representation followed by Old Sukkur which had 14.5% ESWs.

A summary of the mapping results of each town of Sindh are shown in Table 1-3

Table 1. Distribution of HRG's in Karachi, Hyderabad, Sukkur

Mapping Results

	IDUs	FSWs	ESWs	MSWs	Total
Karachi					
No. of Spots	809	753	712	553	1231
Minimum	10791	10239	7626	4965	33620
Maximum	13733	12853	9538	6410	42573
Average (% of HRGs)	12282 (32%)	11546 (30%)	8582 (23%)	5687 (15%)	38097
Hyderabad					
No. of Spots	179	208	72	70	208
Minimum	871	1511	491	604	3476
Maximum	1135	1987	670	784	4576
Average (% of HRGs)	1003 (24.9%)	1749 (43.4%)	580 (14.4%)	694 (17.2%)	4026
Sukkur					
No. of Spots	188	212	63	71	212
Minimum	1864	1478	273	332	3978
Maximum	2603	1960	400	472	5474
Average (% of HRGs)	2234 (47.6%)	1719 (36.7%)	337 (7.2%)	399 (8.5%)	4689

3. INTEGRATED BIOLOGICAL & BEHAVIORAL SURVEILLANCE

The main objectives of the study were biological testing for HIV and to analyze the behavior of the four high-risk groups (FSWs, MSWs, ESWs and ID users) toward their sexual life and knowledge about the sexually transmitted diseases and HIV/AIDS. Pre-designed, ethically approved questionnaire was administered after taking informed consent for the behavior study and dried blood technique was used for taking blood.

Following were the sample size and sampling technique for each group in the three cities:

Table 2: Sample size and Sampling Technique used for each group

City (n)	High Risk Group	Sample	Sampling Technique
Karachi (800) *	FSWs Street	125	Time location cluster
	FSWs <i>kothikhana</i>	225	RDS**
	FSW Brothel	50	Random
	MSWs	200	RDS
	ESWs	200	RDS
Hyderabad (1190)	FSWs Street	122	Time location cluster
	FSWs <i>kothikhana</i>	228	RDS
	FSW Brothel	40	Random
	MSWs	203	RDS
	ESWs	199	RDS
	IDUs	398	Time location cluster
Sukkur (1124)	FSWs Street	80	Time location cluster
	FSWs <i>kothikhana</i>	288	RDS
	MSWs	169	RDS
	ESWs	185	RDS
	IDUs	402	Time location cluster
Total sample in Sind		3114	

* IDUs were not included in Round 1 in Karachi

**RDS: Respondent Driven Sampling

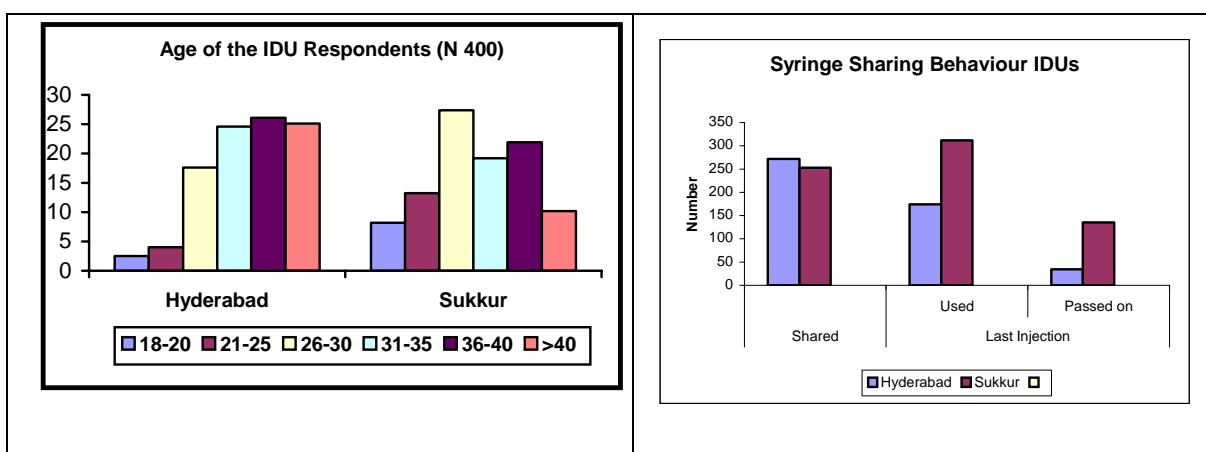
3.1 Summary Findings of Behavioral Surveillance

3.1.1 Injection Drug Users:

- IDUs in Hyderabad up to 30 years old were 96 (24.1%) and above 30 years 302 (75.9%). In Sukkur 196 (48.8%) were up to 30 years old and 206 (51.2%) above 30 years.
- Marital status slightly varied in two cities as in Hyderabad 227 (57%) IDUs were unmarried and 163 (41%) were married. In Sukkur 202 (50.2%) were unmarried where as 182 (45.3%) were married.
- Time as an IDU was divided in five years, 5-10 years and > 10 years. In Hyderabad 131 (34.4%) IDUs were injecting drugs for greater than 10 years followed by 129 (33.9%) who were IDUs for 5-10 years and 121 (31.8%) up to five years. In Sukkur up to five years was

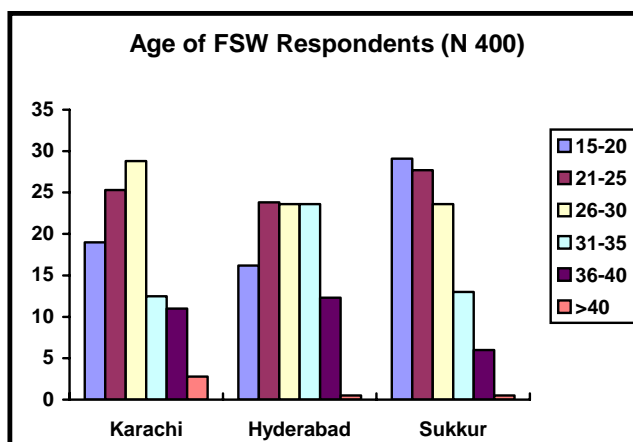
the predominant time period 249 (62.3%) followed by 5-10 years 102 (25.5%) and 49 (12.3%) more than 10 years.

- Last injection with a new syringe was reported by 221 (55.9%) IDUs in Hyderabad while 174 (44.1%) informed that they did not use a new syringe in their last injection. In Sukkur 80 (19.9%) IDUs informed that they used a new syringe for an injection where as 312 (77.6%) reported not using a new syringe in their last injection.
- Sexual activity with wife or another woman in the past month was reported by 90 (23.7%) IDUs and condom use in the last sexual act was reported by 17 (4.5%) respondents in Hyderabad. In Sukkur 204 (53.7%) IDUs informed that they were involved in sexual activity where as condom use was reported by 27 (7.1%) respondents.
- Sexual act with a *hijra* in Hyderabad in the past month was reported by 26 (6.5%) IDUs and 2 (7.7%) used a condom while 13 (50%) informed that they used a lubricant in the same act. Sexual activity with a *hijra* in Sukkur was informed by 66 (16.4%) IDUs and 6 (9.1%) used a condom where as 15 (22.7%) reported using a lubricant in the last act.
- Sharing of syringes and transmission risk of HIV was correctly identified by 72 (59%) IDUs in Hyderabad and 50 (41%) in Sukkur.



3.1.2 Female Sex Workers:

- In Karachi a total of 400 FSWs were interviewed. Among them 125 (31%) were street based, 225 (56%) KK and 50 (13%) brothel based FSWs. In Hyderabad 390 FSWs were included in IBBS. Out of them 122 (31%) were street based, 228 (58%) KK and 40 (10%) brothel based FSWs. In Sukkur 368 FSWs were interviewed and out of them 80 (22%) were street and 288 (78%) KK based. There is no licensed brothel in Sukkur.
- Three FSWs (0.77%) were HIV positive in Karachi. Two belonged to KK sub group from SITE town and one was street FSW from Liaquatabad town. No FSW in Hyderabad and Sukkur tested positive.
- The average age of FSWs in Karachi was 27 years, Hyderabad 29 years and 26 years in Sukkur.



Summary Report – IBBS Sind – Karachi, Hyderabad, Sukkur

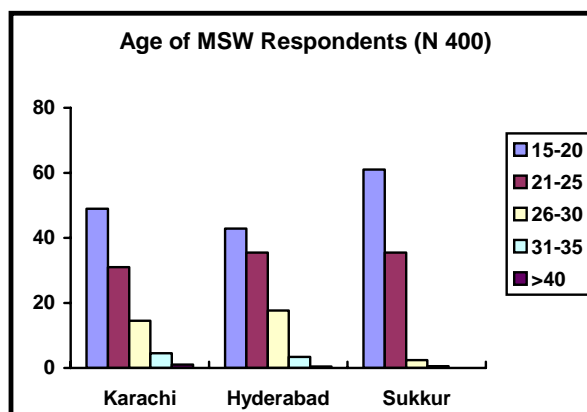
Round 1, 2005-06

- Urdu 147 (37%) and Punjabi 179 (45%) were the predominant ethnicities in Karachi. While in Hyderabad it was Sindhi 233 (60%) and Punjabi 86 (22%). In Sukkur, Sindhi speaking FSWs were 246 (67%) followed by Urdu speakers 49 (13%).
- In Karachi average monthly income of street FSWs was Rs. 12,764 (US\$ 212.7), KK Rs. 11,066 (\$ 184.4) and for brothel it was Rs. 15,929 (\$ 265.4). In Hyderabad average monthly income of street FSWs was Rs. 3,987 (\$66.4) for KK it was Rs. 3,056 (\$ 50.9) and for brothel it was Rs. 58,605 (\$ 976.7). In Sukkur street FSWs were earning Rs. 6,256 (\$ 104.1) and KK Rs. 4991 (\$ 83.1) per month.
- Highest proportion of FSWs from same city was Sukkur 357 (97%) while in Karachi 205 (51%) belonged from the city and the rest had migrated from different parts of Pakistan (Table 1). In Hyderabad 242 (62%) were originally from the city while the remaining had come from various parts of Pakistan.
- Number of years as an FSW varied. In Karachi street and KK FSWs had been in sex work for five years while brothel based FSWs reported 11 years time (Table 2). In Hyderabad, street based FSWs reported five years, KK six and brothel nine years. In Sukkur, street based reported six years and KK five years.
- In the three cities there was variation in the method of seeking clients. In Karachi street FSWs relied on mobile phone 52 (42%) and roaming around 57 (46%) while in Hyderabad the same preferred roaming 47 (39%) followed by mobiles 22 (18%). In Sukkur it was roaming 64 (80%) followed by old clients 16 (20%).
- KK FSWs sought clients through madam or pimp 160 (71%), 170 (75%) and 87 (30%) in Karachi, Hyderabad and Sukkur respectively. This was followed by mobile 45 (20%) and 12 (5%) through old clients in Karachi. In Hyderabad old clients 48 (21%) was the second most preferred method. In Sukkur roaming around was informed by 119 (41%) FSWs.
- Madam or pimp was the most common 42 (84%) method of seeking clients in Karachi while in Hyderabad it was mobile phone 27 (68%).
- An average of one client per day was reported by 48 (46%) and 77 (79%) street FSWs in Karachi and Hyderabad (Table 2). Where as in Sukkur 34 (43%) street FSWs reported an average of two clients per day. KK 68 (43%) FSWs in Karachi and 121 (42%) in Sukkur reported two clients per day while in Hyderabad 119 (87%) informed that they entertain one client per day. Brothel based FSWs in Karachi and Hyderabad reported one client per day 19 (49%) and 25 (86%).
- In Karachi 48 (38%) reported condom use in last vaginal sex followed by 15 (12%) and 1 (1%) for Hyderabad and Sukkur respectively.
- One hundred and thirteen (50%) KK FSWs in Karachi reported condom use in last sexual encounter followed by 23 (10%) and 62 (22%) in Hyderabad and Sukkur.
- Condom use in last vaginal sex in Karachi was reported by 34 (68%) FSWs and 28 (70%) in Hyderabad.
- Knowledge regarding HIV/AIDS transmission varied. For example healthy looking person can carry HIV virus was correctly informed by 64 (59%) street FSWs in Karachi while 24 (57%) in Hyderabad gave correct responses. No one from Sukkur gave correct a response.
- For the same question 82 (41%) KK FSWs in Karachi gave correct responses compared to 46 (56%) in Hyderabad and 125 (68%) in Sukkur.
- And 32 (67%) brothel based FSWs correctly responded in Karachi compared to 37 (95%) in Hyderabad.
- Awareness about a service delivery package in Karachi was reported by 30 (24%) street FSWs a while no one from this category in Hyderabad and Sukkur had this knowledge. Three street (10%) and 6 (10%) KK based FSWs in Karachi were associated with an SDP.

Brothel based FSWs 41 (83.6%) in Karachi and 24 (60%) in Hyderabad were associated with an SDP.

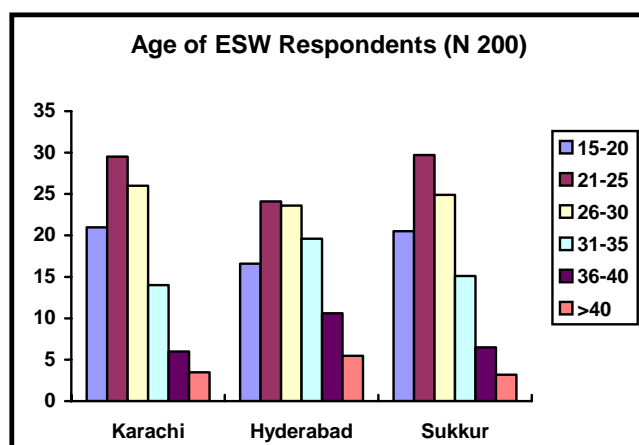
3.1.3 Male Sex Workers:

- A total of 572 MSWs were interviewed. In Karachi they were 200, Hyderabad 203 and Sukkur 169.
- Eight MSWs (4%) out of 198 were HIV positive in Karachi. No MSW from Hyderabad and Sukkur was found to be HIV positive. Two MSWs were from North Nazimabad while one each from DHA, Gadap, Liaquatabad, Malir, Saddar and Shah Faisal.
- Average age of MSWs in Karachi and Hyderabad was 22 years and 21 years in Sukkur.
- In Karachi majority 67 (33.5%) were uneducated and 46 (23%) had attended primary school. In Hyderabad also majority 78 (38.1%) were uneducated where as 31 (15.3%) had attended primary school. In Sukkur 53 (31.4%) had not attended any school and 29 (17.2%) had gone through primary school



- Urdu 69 (34.5%) and Punjabi 58 (29%) were predominant ethnicities in Karachi where as in Hyderabad Urdu 96 (47.3%) and Sindhi 88 (43.3%) were the main ethnicities. In Sukkur also Urdu 44 (26%) and Sindhi 51 (30.2%) were the predominant ethnicities.
- Marital status in the three cities varied. Majority of MSWs in Karachi 190 (95%) were unmarried where as 7 (3.5%) reported being married. Major proportion of MSW in Hyderabad were unmarried 180 (88.7%) however 23 (11.3%) also reported being married. In Sukkur 146 (86.4%) were married while 23 (13.6%) reported being married at the time of interview.
- Urdu 69 (34.5%) and Punjabi 58 (29%) were predominant ethnicities in Karachi where as in Hyderabad Urdu 96 (47.3%) and Sindhi 88 (43.3%) were the main ethnicities (Table 4). In Sukkur also Urdu 44 (26%) and Sindhi 51 (30.2%) were the predominant ethnicities.
- In Karachi average monthly income of MSWs was Rs.3905 (US\$ 65), in Hyderabad it was Rs.2670 (\$ 44.5) and in Sukkur it was Rs.3390 (\$ 56.5).
- Average number of years as an MSW was reported to be five years in Karachi, six years in Hyderabad and three years in Sukkur.
- Average number of clients in a day by MSWs was reported to be five in Karachi, four in Hyderabad and three in Sukkur.
- Condom use in last sexual act was reported by 45 (22.5%) and lubricant by 142 (71%) MSWs in Karachi. In Hyderabad 60 (29.6%) reported condom use and 156 (76.8%) informed that they used a lubricant in last sexual act. In Sukkur condom use was reported by 18 (10.7%) and lubricant 102 (60.4%).
- 75 (47.2%) MSWs had correct knowledge about proper use of condom and protection against HIV in Karachi, 62 (66%) in Hyderabad and 78 (87.6%) in Sukkur.

3.1.4 Eunuch Sex Workers (Hijra)



- In Karachi 200 ESWs were interviewed where as 199 in Hyderabad and 185 in Sukkur.
- Average age of ESWs in Karachi was 26 years, 29 in Hyderabad and 27 in Sukkur.
- The proportion of uneducated ESWs was highest in Hyderabad 130 (65.3%) and lowest in Sukkur 62 (33.3%).
- The average years for which they have been operating as

ESWs was lowest in Sukkur (9 years) and highest in Hyderabad (13 years). On the other hand, age of first sexual intercourse was lower in Karachi (13 years).

- Majority of *hijras* reported seeking clients on their own and roaming around on the street. In contrast to Karachi and Hyderabad a high proportion 87 (47.3%) in Sukkur reported seeking clients while roaming around on the street. ESWs from all three cities reported an average of three clients per day.
- Although proportion of ESWs reported using condom was higher in Sukkur 70 (37.8%) than in Karachi 36 (18%) and Hyderabad 16 (8%) the data on possession of condom at the time of interview was comparable in the three cities. However, it is worth mentioning here that. The use of lubricant while having sex was higher in Karachi 122 (61%) and Sukkur 142 (76.8%) than in Hyderabad 95 (47.7%).
- There were three HIV positive belonging from Karachi, two from Hyderabad and three from Sukkur. In Karachi the test positive ESWs were from Baldia, Korangi and Liaquatabad, while in Hyderabad they were from Zone 2 (Board Office to Airport) and Zone 9 (Tillak Chari to Badin Stop). The three positives in Sukkur belonged to New Sukkur zone.

Table 3: A comparison of behaviors and practices among HRGs

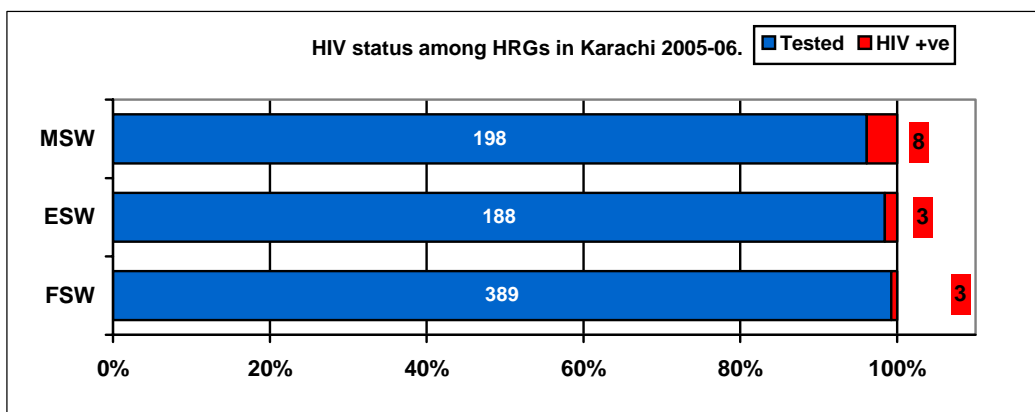
	Karachi			Hyderabad			Sukkur		
	FSWs	MSWs	ESWs	FSWs	MSWs	EESWs	FSWs	MSWs	ESWs
Average Age In Years	27.4	21.8	26.4%	28.7	22.4	28.6	25.9	20.5	26.7
Married (%)	38.3	1%	1.1%	91.8	1.1%	1.1%	75.0	1.1%	1.1%
Per Month Income Pk Rs	12020.6	3905.1	6151.8	9041.7	2670.1	5160.2	5264.2	3390.3	8002.8
>20 paid Clients/month	24.5	52.8%	31.3	3.3	97.5	87.7	84.7	95.8	96.7
Condom Use on last vaginal sex %	48.8	-	-	16.9	-	-	17.1	-	-
Condom Use on last anal sex %*	26.7	22.5%	18%	13.5	29.6%	8%	33.3	10.7%	37.8%
Condom Use on last oral sex %	15.5	12.0%	7.4	27.8	20%	9.2	29.7	14.3%	21.6
Top 03 sources of condom	Client (28.5) Medical store (29.5) General store (15.5)	Medical store (33.0) General store (28%) Customer (13%)	Customer (15) General store (22) Medical store (20)	Customer (10.5) Client (5.9) Clinic (6)	Customer (27.1) General store (8.4) Medical store (7.4)	Customer (17) Friend (7) General store (2)	Client (24.4) General store (7.2) Medical store (6.5)	(22.9) Medical store (7.0) General store (3.6)	Medical store (20) Customer (11) General store (3.2%)
Knowledge of Sex Intercourse as a route of HIV transmission	79.8%	69.5%	60.5%	29.2%	35%	50.3%	44.3%	40.2%	44.3%
Condoms protect against HIV	63.9%	48.1	46.2%	59.4%	66.0%	56.5%	72.0%	87.0%	53.4%
Know about STIs	75.5%	64.5%	63.6%	33.6%	31.0%	54%	54.9%	41.4%	40.9%
Condoms protect against STIs	32.1%	15%	14.5%	52.4%	9.9	9%	33.6%	3%	9.8%
Suffered from STIs (6 months)	11.8%	13.2%	12%	10.6%	4.1%	2.6%	13.9%	3.2%	2.2%
Arrest (last 6 months)	12.6%	23.1%	25.4%	3.4%	32.5%	4.5	3.8%	11.2%	8.2%

* The percentages are calculated among those who responded on the question

3.2 Results of Biological Surveillance:

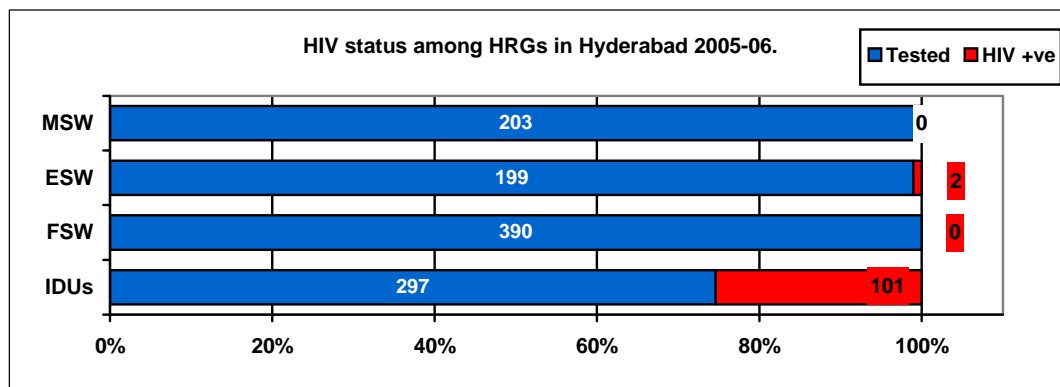
3.2.1 Karachi

Out of 198 MSWs 8 (4%) were tested positive, 3 ESWs and 3 FSWs were also found HIV+ in Karachi. The results of Biological testing in Karachi are provided in the figure below.



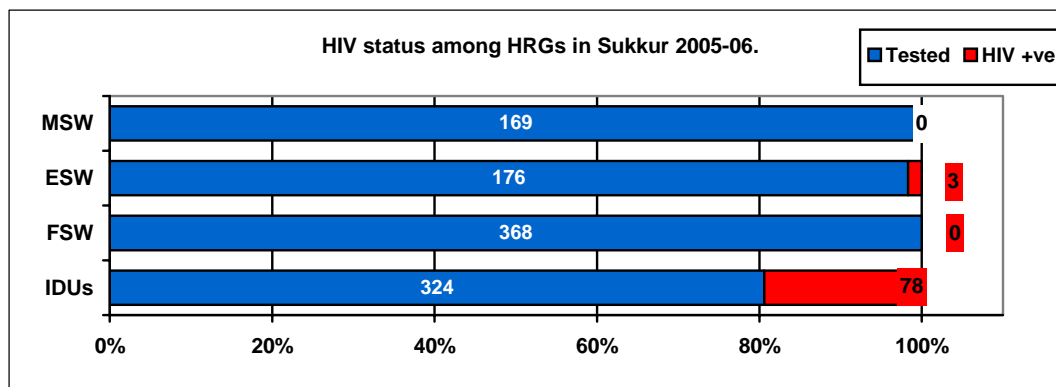
3.2.2 Hyderabad

In Hyderabad out of 297 IDUs 101 (25.4%) were HIV positive.



3.2.3 Sukkur

In Sukkur out of 324 IDUs 78 (19.4%) were HIV positive.



4. Comparison with previous studies/last round:

The National RTI Study of NACP Published in 2002 reported prevalence of HIV 23% among IDUs and 1.6% among MSWs. In 2004-5 Karachi Pilot Mapping and IBBS exercise was conducted in which 26% IDUs and 2% MSW were HIV positive. However, no other risk group was found HIV positive although the same number of interviews and blood samples were collected. The 1st surveillance round is significant because this time in Karachi three street based FSWs are HIV positive and this round has also established the fact that MSWs are the second highest risk group as 2% are again tested positive in Karachi.

5. Policy Implications:

There is clearly a raging HIV epidemic among IDUs in Sindh province and the infection is making its place among MSWs. There is an urgent need to start service delivery packages in Sukkur and Hyderabad among IDUs followed by interventions for MSWs in Karachi as well as other cities.