

# Population-based estimates of prevalence of HIV, HBV and HCV and HIV-related risk behaviors among male injecting drug users in Lagos, Nigeria

Waimar Tun<sup>1</sup>, Sylvia Adebajo<sup>2,3</sup>, Lolade Abiodun<sup>2</sup>, Andrew Karlyn<sup>1</sup>, Lung Vu<sup>1</sup>, Jennifer Anyanti<sup>3</sup>, Issa Kawu<sup>4</sup>, and Meredith Sheehy<sup>1</sup>

<sup>1</sup>Population Council, Washington DC, United States; <sup>2</sup>Population Council, Abuja, Nigeria; <sup>3</sup>Enhancing Nigeria's Response to HIV&AIDS (ENR) Programme, Federal Ministry of Health, Abuja, Nigeria



# Why focus on injecting drug users?

- Increasing number of injecting drug users (IDUs) in Nigeria
- Little is known about HIV, hepatitis B (HBV), and hepatitis C (HCV) infections among IDUs in Africa, including Nigeria
- IDUs are vulnerable for HIV infection
  - Hidden and stigmatized
  - Low socioeconomic status
  - No tailored services addressing the unique needs of IDUs

# Objectives

- Determine the prevalence of and risk factors for HIV, HBV and HCV infections.
- Build local capacity on conducting surveys among most-at-risk populations (MARPs).
- Link IDUs to the Council's Men Health Network service delivery outlets.

# Study design

- Cross-sectional survey.
- Information collected included:
  - Sexual history
  - Drug history
  - Social network
  - Health seeking behavior
  - Discrimination
- Participants tested for HIV, HBV and HCV.
- Protocol approved by local and Population Council review boards.

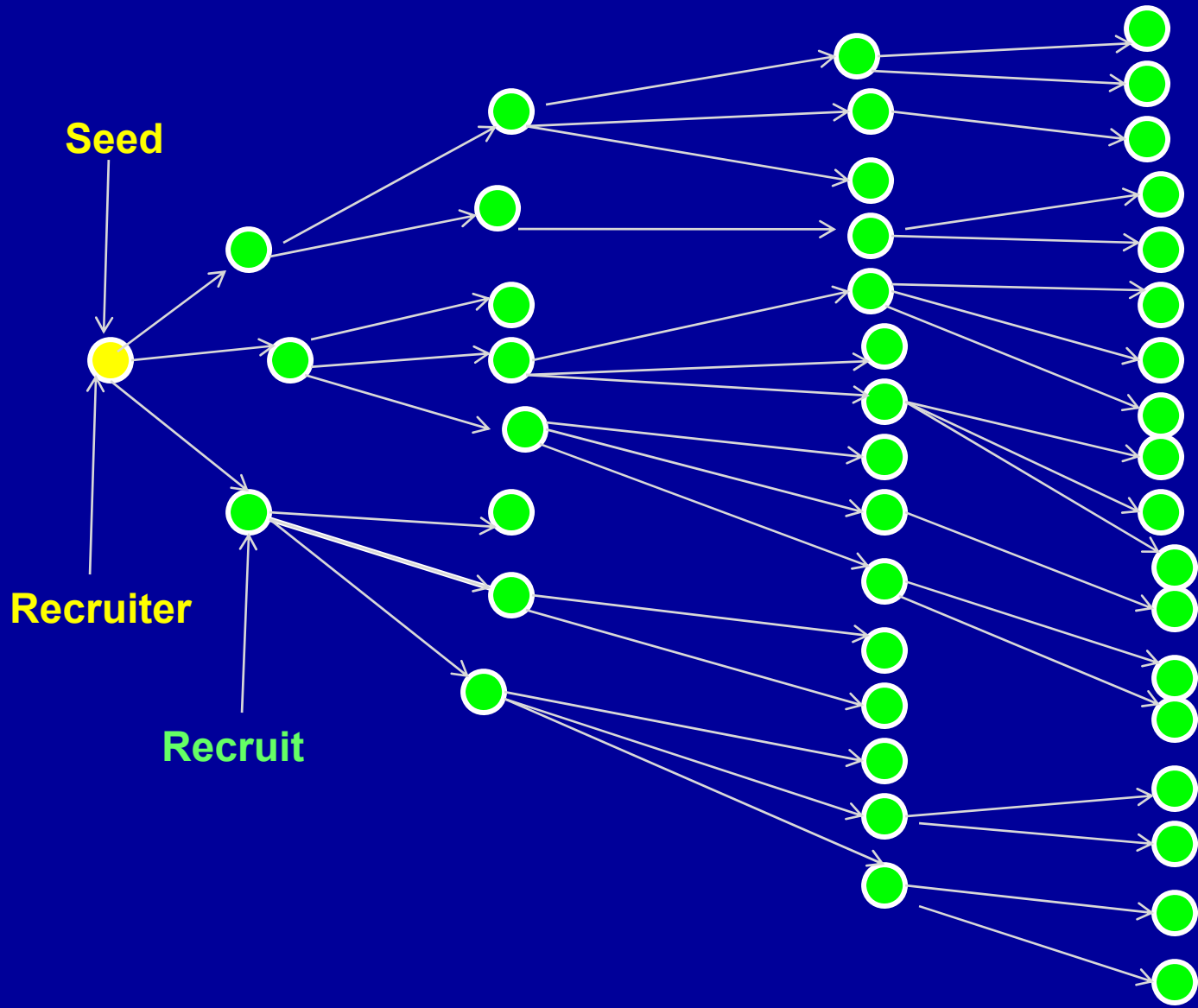
# Eligibility

- IDUs 18 years and older living in Lagos metropolitan area who provided informed consent
- Used needles to inject drugs in past 12 months
- Screening questions were used to screen for impostors
- A total sample of 328 IDUs were recruited between August and September 2010

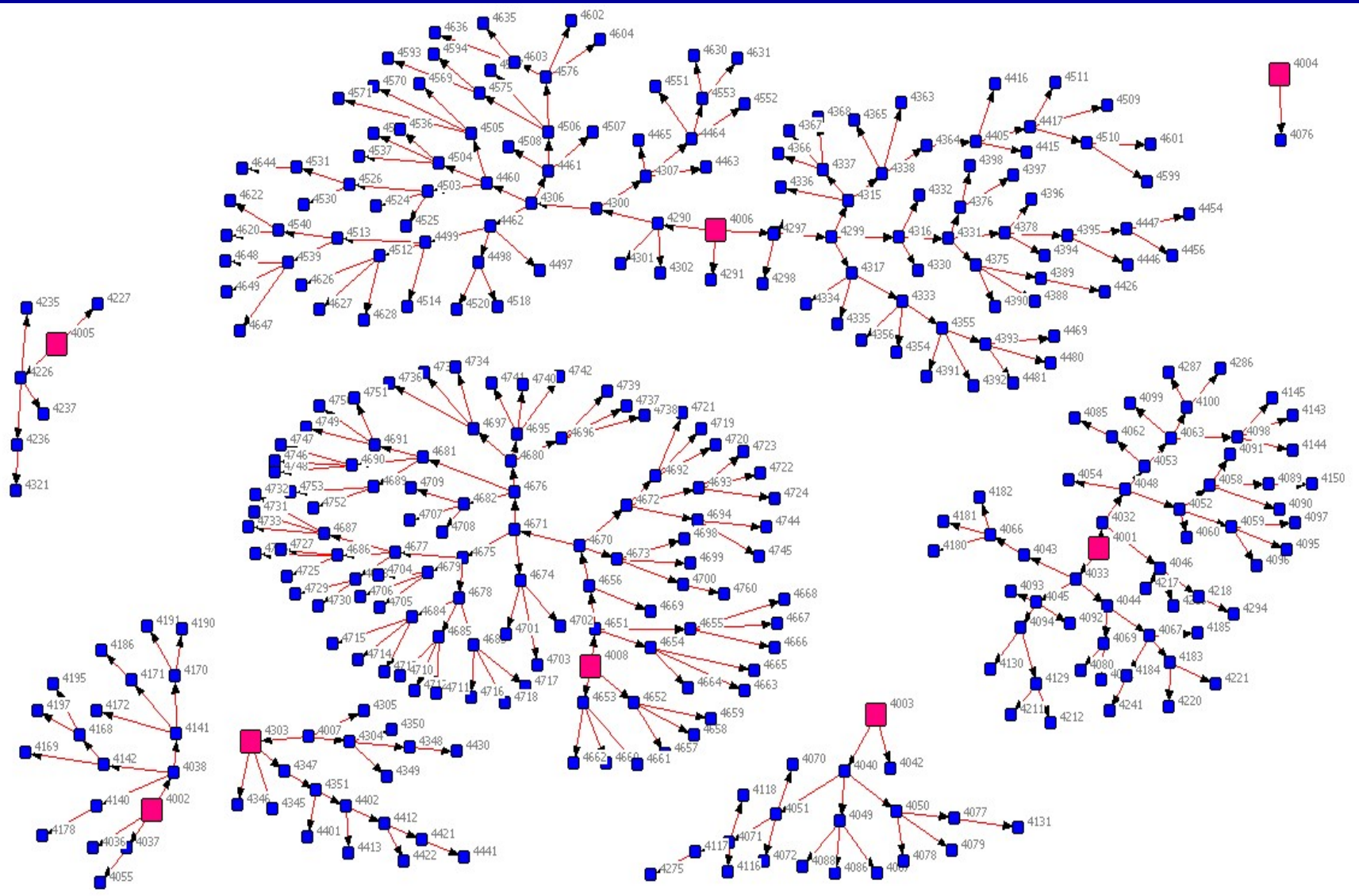
# Sampling

- We used respondent-driven sampling (RDS):
  - Sampling method commonly used for hard-to-reach populations
  - Type of chain referral sampling (snowball) whereby peers recruit their peers
  - Population must be connected through social networks
  - Consists of 2 parts:
    - Recruitment strategy
    - Analysis (takes into account social network sizes and recruitment patterns)

# Wave 1    Wave 2    Wave 3    Wave 4



# Recruitment tree (N = 328)



# Results

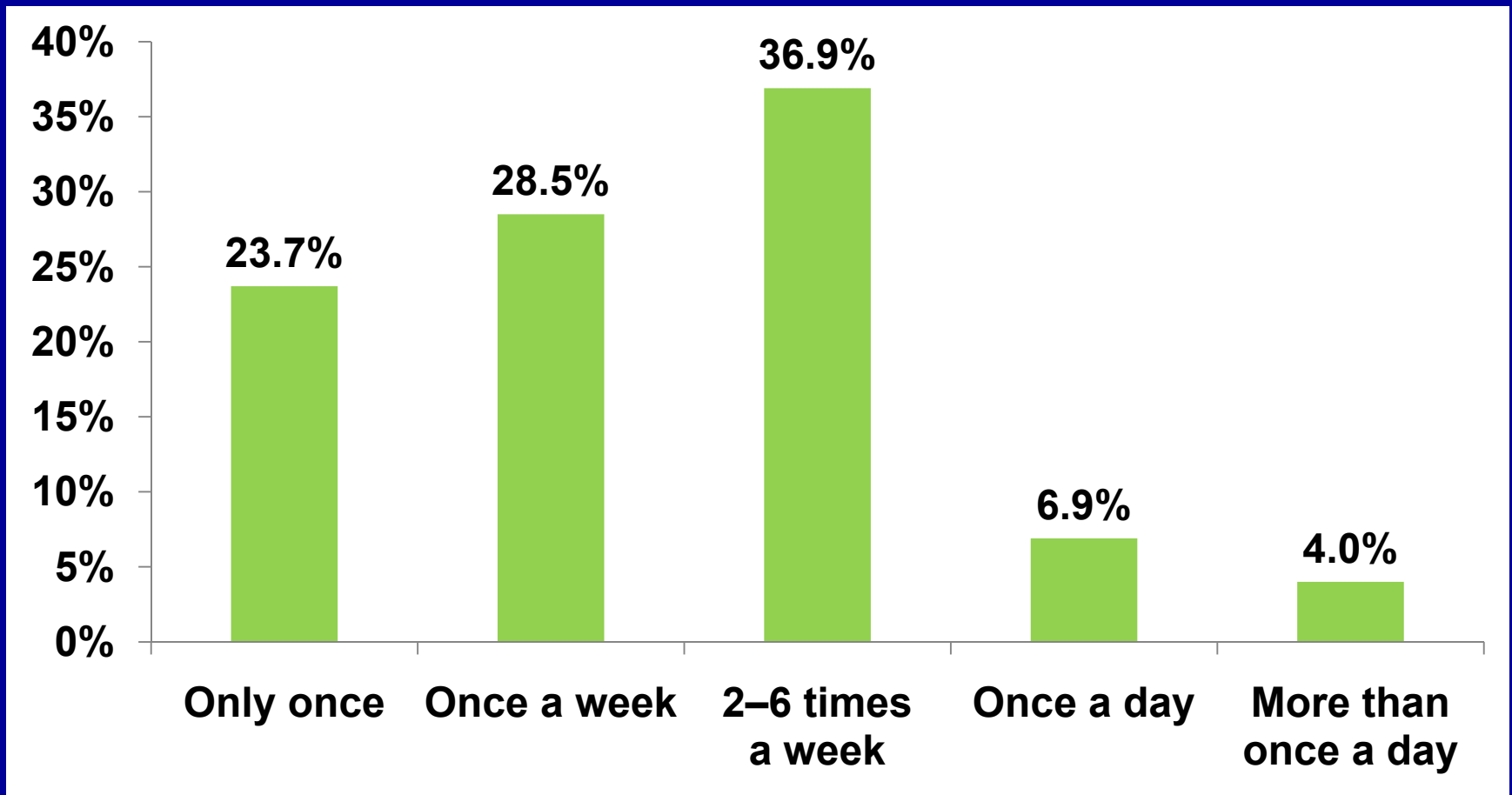
# Demographic characteristics

Characteristics	% (95% CI)
<b>Age (yrs) [median; min-max]</b>	40 (18–50)
<b>Age (yrs)</b>	
18–25	4.1 (1.6–7.1)
26–39	40.0 (32.0–47.2)
40–50	55.9 (48.4–64.2)
<b>Education</b>	
Primary	26.9 (20.9–33.4)
Secondary	46.7 (39.3–53.9)
Tertiary	26.4 (20.0–32.7)
<b>Job</b>	
Not earning	35.0 (28.5–43.0)
Part-time	27.6 (21.2–32.9)
Self-employed	30.3 (23.2–38.2)
Fulltime	7.1 (3.9–10.6)

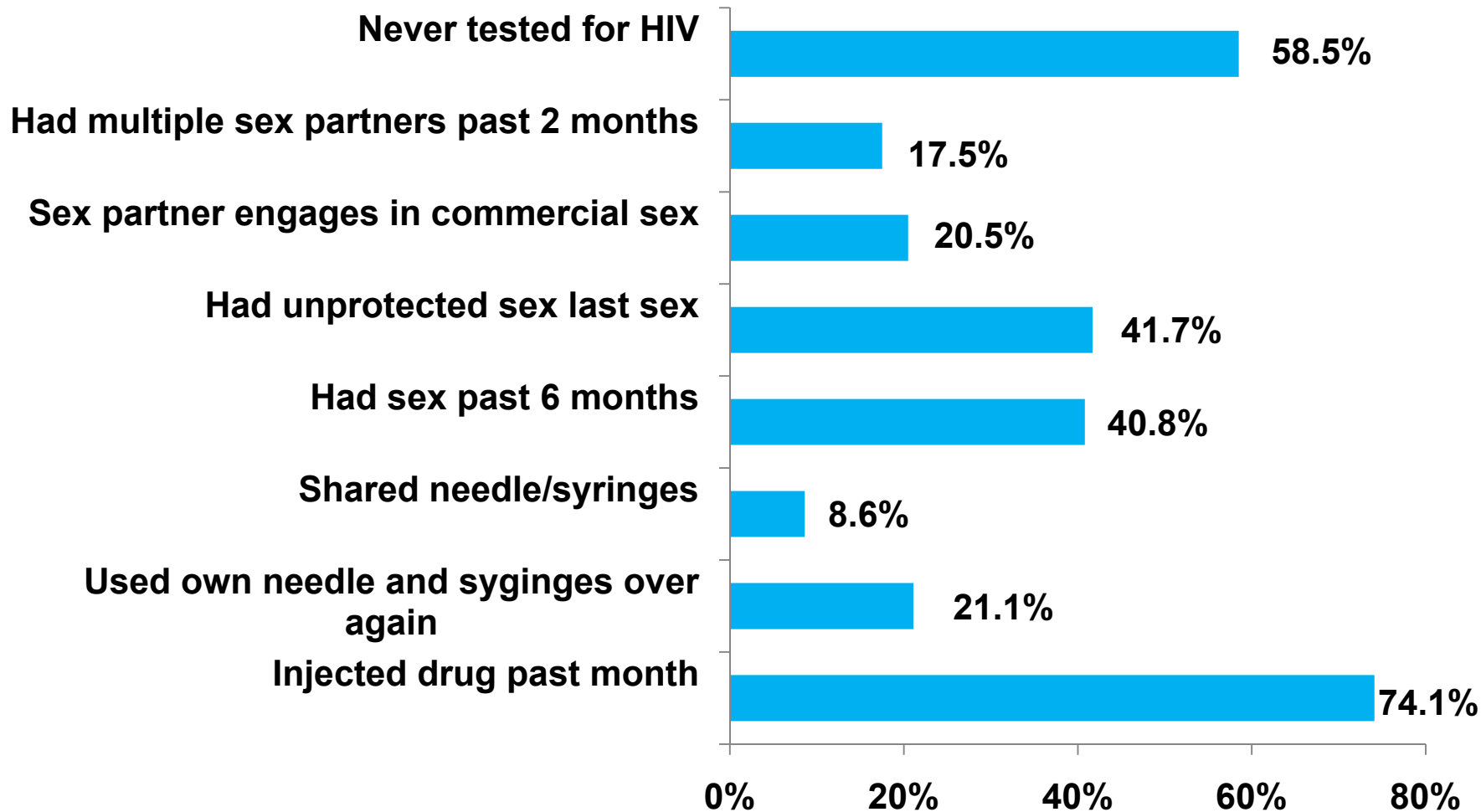
# Demographic characteristics

Characteristics	% (95% CI)
<b>Marital status</b>	
Single	60.9 (54.2–70.4)
Single living w/ female partner	5.4 (2.7–8.2)
Single living w/ male partner	0.5 (0–1.3)
Married to a woman	32.5 (24.0–38.6)
<b>Religion</b>	
Christian	74.0 (69.5–80.9)
Muslim	23.3 (17.2–28.4)
<b>Away from home for <math>\geq 1</math> month</b>	
Yes	27.5 (21.6–33.4)
No	72.5 (66.6–78.4)

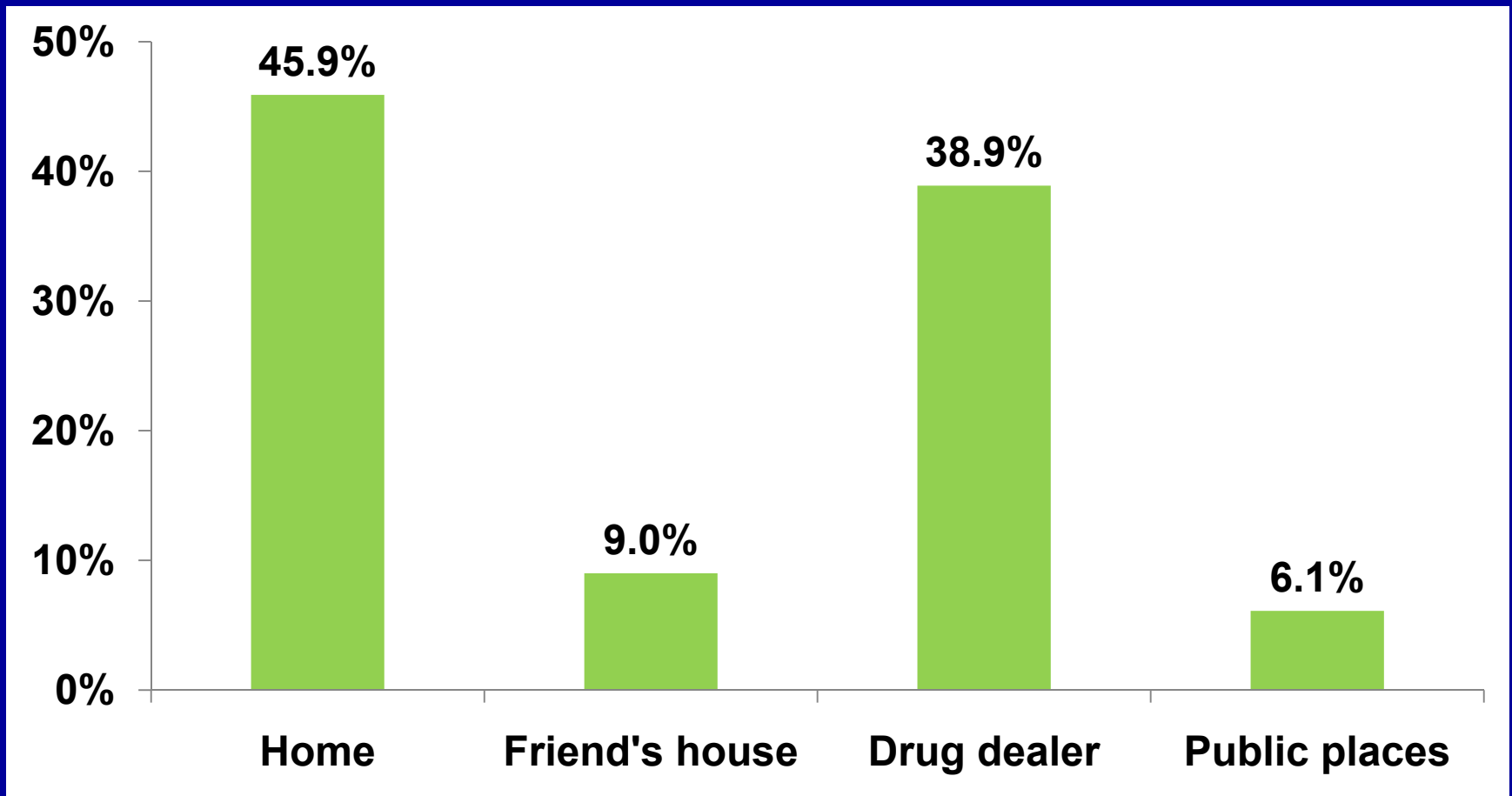
# Frequency of drug injection (past month)



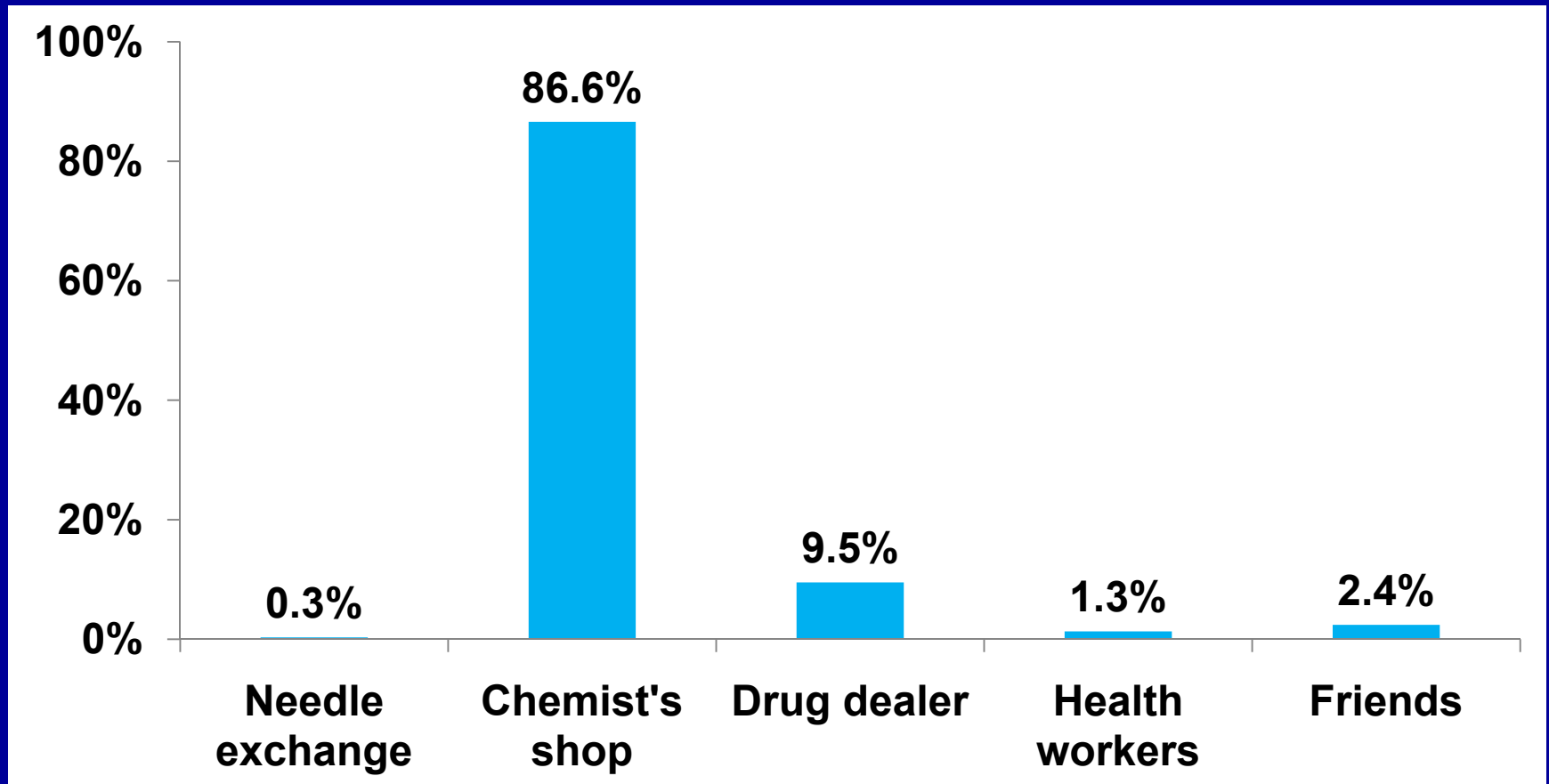
# Injecting and sexual behaviors



# Common locations for injection drugs



# Where needles/syringes are obtained



# Prevalence of HIV, HBV and HCV

	Unadjusted % (n)	Adjusted % (95% CI)
HIV	1.8 (6)	0.9 (0.2–2.0)
HBV	6.8 (22)	7.8 (4.3–11.7)
HCV	5.9 (19)	7.7 (3.5–12.7)

# Factors associated with HBV infection

	OR (95% CI)	AOR (95% CI)
<b>Age: 40–50 (vs. 18–39)</b>	1.1 (0.4–3.1)	1.7 (0.4–6.6)
<b>Education (ref = primary)</b>		
Secondary	1.7 (0.5–6.0)	2.2 (0.5–10.4)
Tertiary	1.1 (0.2–4.9)	1.4 (0.2–9.6)
<b>Injected drugs past month</b>	2.7 (1.0–7.6)*	5.0 (1.5–16.1)**
<b>Shared needle or syringes past 1 month</b>	3.3 (0.8–14.6)	5.2 (0.7–36.9)
<b>Years injecting drugs</b>		
≥ 10 years (vs. < 10 years)	2.1 (0.8–5.8)	2.5 (0.8–8.0)
<b>Unprotected sex past 6 months</b>		
Yes	1.0	1.0
No	0.1 (0.01–0.8)*	0.1 (0.01–0.6)*
No sex	0.8 (0.2–2.8)	0.7 (0.2–3.0)

\*significant at  $p < 0.05$ ; \*\*significant at  $p < 0.01$

# Conclusion

- Low HIV prevalence ~2%.
- Moderate/high prevalence of HBV and HCV.
  - HBV infection was associated with unsafe sex and frequency of drug injection.
- Low needle sharing.
- Low testing.
- Over two-thirds used heroin.
- Engage in sexual risk behaviors.

# Limitations

- Low prevalence of HIV and small sample size, preventing multivariate analysis.
- Difficulty recruiting IDUs in poor and stigmatized settings.

# Recommendations

- Closely monitor the epidemic among IDUs to avoid what has been observed in Asia and Central Europe.
- Further studies with larger samples of male and female participants.

# Acknowledgements

- Participants
- Federal Ministry of Health
- Lagos State SACA
- Enhancing Nigeria's Response to HIV & AIDS (ENR) Programme with funding from DFID
- The entire Research Team