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Use of laboratory tests to study non-disclosure of HIV status within the unlinked anonymous survey in GUM clinics

Health Protection Agency

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Background

- The Unlinked Anonymous Survey of GUM clinic attendees (GUM Anon) anonymously tests for HIV residual sera from all patients having a routine syphilis test
- The GUM Anon survey is one of three UA surveys that provide data on the prevalence of undiagnosed HIV in the population that along with other data sources inform the HPA estimates of people living with HIV in the UK
- Potential bias of the survey is the possibility of non-disclosure of "known HIV-infected status" by patients

Pilot study

- To assess whether viral load (VL) and testing for ARV could be used as objective measures of non-disclosure
- HIV positive samples from one clinic in 2009 = 132
- Remaining undiagnosed = 18
- VLBLD or <1000copies/l = 13
- Sufficient sample = 8
- ARV detected = 8
- Results from this small study showed the feasibility of testing for ARV as a marker for non-disclosure

Aim:

- **To assess the extent of non-disclosure of known HIV status among GUM clinic attendees by testing for ARVs**

Method:

- **Inclusion criteria:**
  - Remaining undiagnosed after the clinic visit
- **Sampling**
  - Stratified by site (London *vs* outside)
- **ARVs tested for:**

  Lamivudine, Emtricitabine, Tenofovir, Efavirenz, Nevirapine, Etravirine, Darunavir, Atazanavir, Saquinavir, Lopinavir, Amprenavir, Tipranavir, Ritonavir, Raltegravir and Maraviroc

Results (2005-2009)

Characteristic	Remaining undiagnosed n
Total number	206
Exposure Category	
MSM Male Heterosexuals Female	121 38 47
Location	
Clinic in London Clinic outside London	106 100
Co-infection with acute STD	
Yes No	81 125

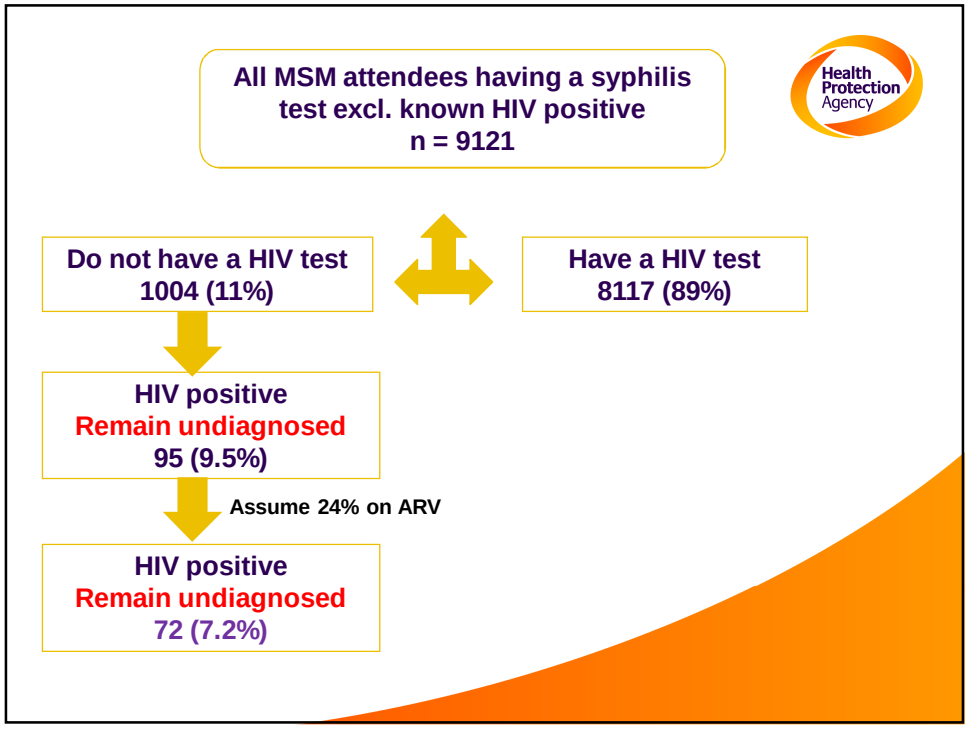
Results (2005-2009)

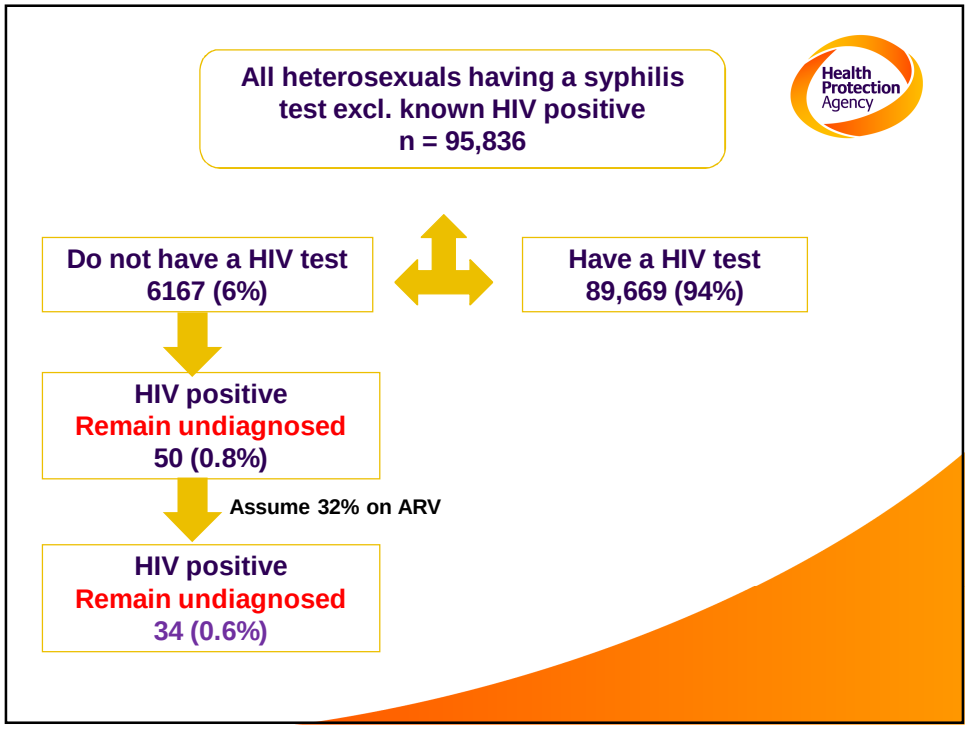
Characteristic	Remaining undiagnosed n	ARV present x (%)	95% CI
Total number	206	56 (27%)	22-34
Exposure Category			
MSM	121	29 (24%)	17-32
Male Heterosexuals	38	12 (32%)	19-48
Female	47	15 (32%)	20-46
Location			
Clinic in London	106	35 (33%)	25-42
Clinic outside London	100	21 (21%)	14 -30
Co-infection with acute STD			
Yes	81	21 (26%)	18-36
No	125	35 (28%)	21-36

ARV results:

- **All at therapeutic levels**
- **34/56 3 active drugs detected**

What is the effect of non-disclosure on the estimates of undiagnosed HIV prevalence in GUM clinics in 2008?


All MSM attendees having a syphilis test excl. known HIV positive
n = 9121
Health Protection Agency
Do not have a HIV test
1004 (11%)
Have a HIV test
8117 (89%)
HIV positive
Remain undiagnosed
95 (9.5%)
Assume 24% on ARV
HIV positive
Remain undiagnosed
72 (7.2%)


All heterosexuals having a syphilis test excl. known HIV positive
n = 95,836
Health Protection Agency
Do not have a HIV test
6167 (6%)
Have a HIV test
89,669 (94%)
HIV positive
Remain undiagnosed
50 (0.8%)
Assume 32% on ARV
HIV positive
Remain undiagnosed
34 (0.6%)

Summary of results

- This is the first objective evidence that non-disclosure occurs in a GUM setting
- A quarter of samples from undiagnosed individuals had ARV present suggesting non-disclosure of their HIV status
- This proportion was similar for MSM and heterosexuals
- This proportion was slightly higher in London than elsewhere in the UK but did not reach significance

Conclusions

- For all MSM undergoing syphilis tests but not having a HIV test 9 in 100 are HIV positive and at least 2 of these are on treatment and not disclosing their status
- For all heterosexuals undergoing syphilis tests but not having a HIV test 8 in 1000 are HIV positive and at least 2 of these are on treatment and not disclosing their status
- Further work is being carried out to explore the potential effect of these findings on the national estimates

Acknowledgments

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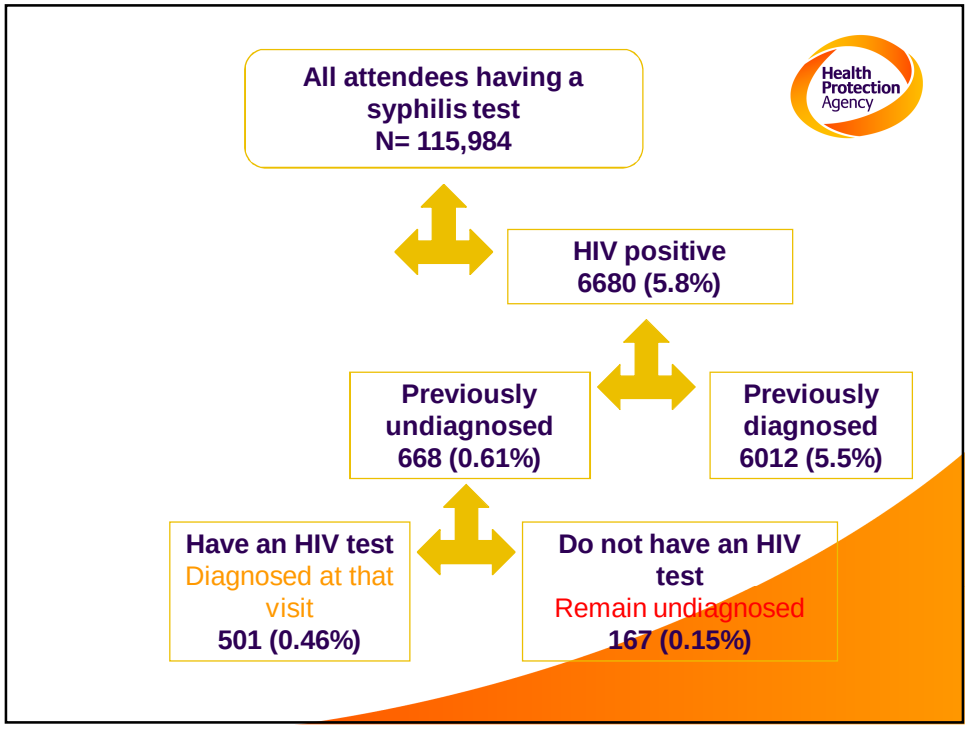
*** GUM Anon network:** Abley J, Acharya C, Aarons E, Almeida M, Andrews N, Ashcroft T, Azadian BS, Ball D, Ball G, Birley H, Bittle H, Bowman C, Brown M, Carey PB, Carne C, Claxton A, Clow C, Coyle P, Davies D, Edgley B, Greene L, Harper C, Harrison I, Harte A, Hay P, Houghton H, Jalal H, King C, Kinghorn C, Krahe D, Kudesia G, Lang C, Larbi S, Lawton M, Laver S, L'esrange M, Leigh I, Leung T, Madonna S, Macrae M, Magee J, Maw R, Maxwell S, McCaughey C, McKernan S, McManus T, Mercey D, Mohamed A, Muir D, Murphy S, Nathan PM, Owen N, Payne S, Paxford-Jenkins R, Pickard G, Rice P, Rice S, Ross J, Rothburn M, Salmon M, Sankar KN, Sekar P, Shafi S, Smart D, Struthers K, Stempczyk M, Sullivan A, Sutehall G, Tenant-Flowers M, Tilsed C, Van Hagen A, Wade A, Walters A, Warren R, Watson L, Wilson P, Zuckerman M

Method for estimating the number of persons living with HIV (diagnosed and undiagnosed) in the UK

Fig. 2. **Model influence diagram.** Circles denote parameters (or functions of these) we wish to estimate. Squares denote the sources of data. $\rho_{g,r}$, region-specific proportion in each risk group; $\pi_{g,r}$, HIV prevalence. $\delta_{g,r}$, proportion diagnosed; IDU: injecting drug user; N_r, total population of region r; NATSAL, National Survey of Sexual Attitudes and Lifestyles; NSHPC, National Survey of HIV in Pregnancy & Childhood; ONS, Office for National Statistics; PW, pregnant women; SOPHID, Survey of Prevalent HIV Infections Diagnosed; STI, sexually transmitted infection clinic; UA, unlinked anonymous.

Presanis *et al.* Insights into the rise in HIV infections, 2001 to 2008: a Bayesian synthesis of prevalence evidence. AIDS 2010, 24:2849–2858


All attendees having a syphilis test
N= 115,984
Health Protection Agency
HIV positive
6680 (5.8%)
Previously undiagnosed
668 (0.61%)
Previously diagnosed
6012 (5.5%)
Have an HIV test
Diagnosed at that visit
501 (0.46%)
Do not have an HIV test
Remain undiagnosed
167 (0.15%)