

High level compliance to opt out HIV testing in the Emergency Department (ED) of a large teaching hospital using the biochemistry sample as the sample type for HIV screening

Dr Rebecca Marchant¹, Dr Melissa Hempling¹, Anne Patterson¹, Dr Lisa Hamzah¹, Dr Bojana Dragovic¹, Dr David Carrington¹, Dr Maxillian Habibi¹, Bernard Kelly¹

1. St George's University Hospital NHS Foundation Trust, London, UK

Services in areas of **high HIV prevalence** (between 2 and 5 cases of diagnosed HIV per 1,000 people aged 15 to 59) should:



Offer HIV testing to everyone who registers with the practice and has not been diagnosed with HIV



Offer HIV testing to everyone who attends a specialist sexual health clinic



Offer HIV testing on admission to hospital to everyone who has not previously been diagnosed with HIV and who is undergoing blood tests for another reason

Services in areas of **extremely high prevalence** (5 or more cases of diagnosed HIV per 1,000 people aged 15 to 59 years) should also:



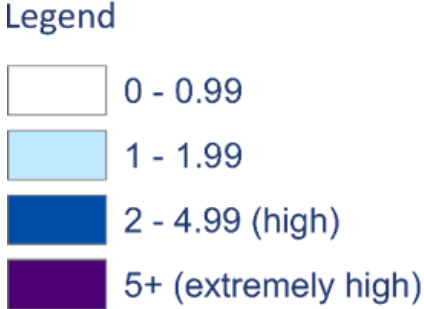
Offer testing to everyone admitted to hospital, including emergency departments, who has not previously been diagnosed with HIV



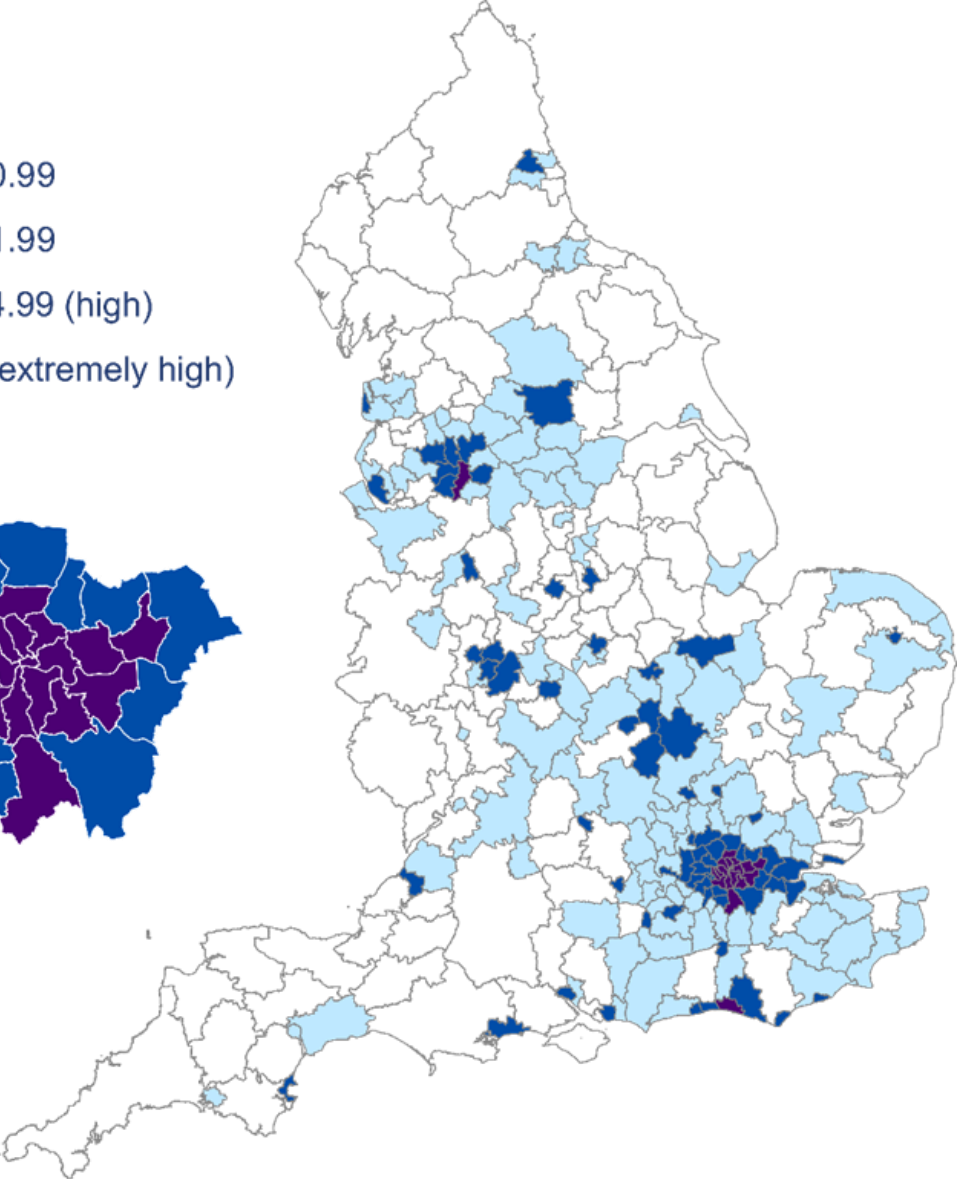
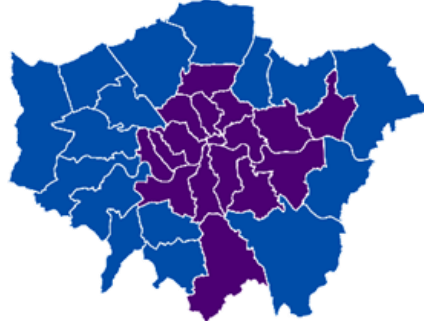
Consider HIV testing opportunistically in general practice



Diagnosed HIV prevalence (per 1,000 population aged 15 to 59 years): England, 2018



London



HIV opt-out testing: how it works



As per NICE guidelines, we offer opt-out HIV testing to those having bloods. Our age range 18-59 years



HIV test is part of all ED caresets



HIV test is done on same sample as used for biochemistry



Tests physically carried out on the automated track in the central blood sciences lab at SGH pathology



Only one test is performed: Roche 4th generation HIV1/2 antigen-antibody combination test



Very high sensitivity for HIV; small risk of false-positive results / non-specificity (3 per 1000)

How the testing works: potential issues



ED at SGH has a 'hot lab' that performs biochemistry testing in the department



These samples have therefore potentially been tested in the ED hot lab prior to having the HIV test performed in the main lab



ED hot lab analysers do not use disposable tips so there is a risk of sample cross-contamination and generating a false-positive HIV result



Therefore a decision was taken to confirm any reactive ED HIV test by a further sample from the patient tested solely in the main lab, rather than follow the usual HIV confirmation testing for non-ED HIV tests

Data for the first year: 1st October 2018 – 30th September 2019

28,390 HIV tests were performed

42,283 patients aged 18-59 had a full blood count

The average HIV testing rate throughout the year was 67%

On implementation of opt-out testing the testing rate increased from average 54% to 73%.

56% females and 44% males tested

Reactive Results

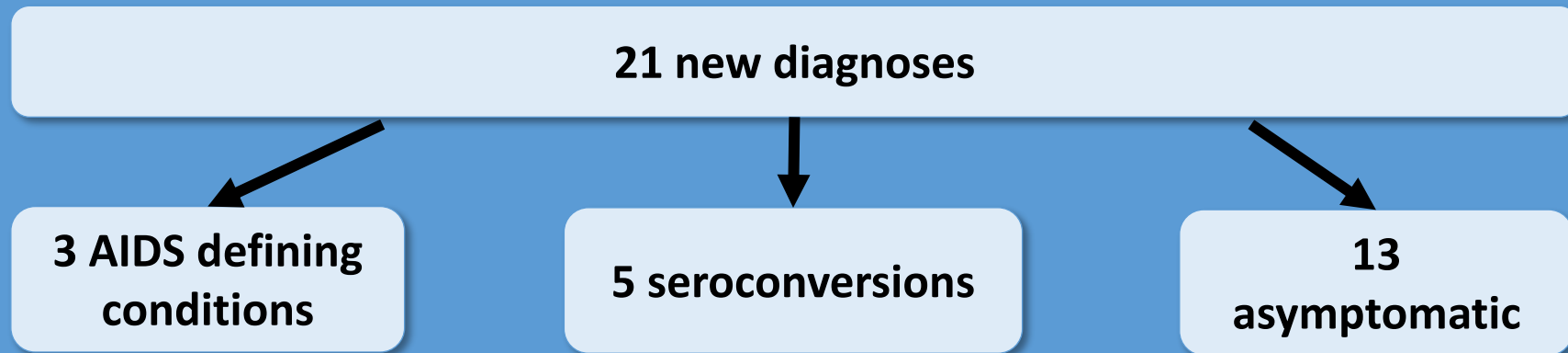
- 355 reactive results: 315 unique patients, 40 patients with a reactive test had >1 HIV test due to multiple ED attendances

Outcome of reactive test	Number of patients
Known HIV positive	252 (212 unique patients)
False positive	77 (0.27% of all HIV tests)
New HIV diagnosis	21
Uncontactable likely HIV positive	3
Refused retest	1
Retested locally	1
Number of partners HIV subsequently testing HIV positive	3

- HIV prevalence of 7.3 per 1000 in those having blood taken aged 18-59 in our ED (estimated local prevalence of 5.8 per 1000)

Demographics of patients newly diagnosed with HIV

Variable	Summary statistic	N=21
Age	Median (range)	37 (20-61)
Male sex	N (%)	19 (90.5)
HIV risk		
MSM	N (%)	11 (52.3)
Heterosexual	N (%)	9 (42.9)
IVDU	N (%)	1 (4.8)
CD4 cell count (cells/ μ l)	Median (range)	352 (9-1025)
CD4<350 (cells/ μ l)	N (%)	10 (47.6)
HIV viral load (cps/ml)	Median (IQR)	137,000 (14,075-677,000)
Never tested	N (%)	12 (57)



Case	Age	Date last test	CD4	VL	Diagnosis	Admitted	HIV considered?
5	31	None	21	211,000	CNS toxoplasmosis	Y	Y
12	52	Jun-98	9	166,000	PCP	Y	Y
6	48	None	45	148,000	TB meningitis	Y	Y
2	28	Oct-18	364	>1 million	Seroconversion	N	Y
14	37	None	340	>1 million	Seroconversion	N	N
8	56	None	194	>1 million	Seroconversion	N	N
10	30	Mar-19	467	>1 million	Seroconversion	N	N
17	56	Nov-18	1025	22,800	Seroconversion	Y	N

How do we compare to other Emergency Departments?

	SGH	KCH ¹	C&W ²	Barts ³
Time period	2018-2019	2016-2017	2015-2016	2015-2016
Weeks follow up	52	31	55	36
FBC tests	42,283	25,639	25,520	24,981
HIV tests	28,390	12,604	7268	6211
Tested positive	310	102	83	71
Newly diagnosed	21	19	12	10
Known positive	207	77	65	55
Uncontactable	3	6	1	1

1 Alexander H, BHIVA 23rd Annual Conference, 2017

2 Parry et al, Epidemiology and Infection, 2018

3 Bradshaw et al, HIV Medicine 2018

Conclusions

- Overall the % of patients testing for HIV has remained at a high level throughout the first year
- Our false positive rate remains low
- Using the biochemistry samples as sample type for HIV testing is proving successful
- HIV ED testing is providing an opportunity to diagnose patients who do not perceive themselves to be at risk or have never tested before
- Following the success we now planning to change our age range to include older adults

Acknowledgments

- The staff of the Emergency Department
- Health Advisors at the Courtyard Clinic
- All the staff at the Courtyard clinic

