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Home delivered dried blood spot testing for hepatitis B screening of household contacts

Assessing the impact on screening uptake for household contacts of hepatitis B infected pregnant women across two London trusts

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HepHIV 2014 Conference, Tuesday 7th October 2014



Background

- Universal antenatal screening for hepatitis B virus (HBV) infection introduced in the UK in 2000
- Household close contacts at increased risk of HBV transmission
- National guidance and standards in place for follow-up screening of:
 - Cases
 - Contacts

BUT

Implementation is sub-optimal



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New approach using alternative technologies

Home delivered, dried blood spot (DBS) testing in a community setting to improve screening and management of household contacts (HHCs)



Objectives

Evaluate the impact of home-delivered DBS on:

- Proportion of newly screened household contacts
- Proportion of newly vaccinated household contacts
- Proportion of newly referred infected household contacts



Methods

- Population of interest: HBsAg positive pregnant women identified through antenatal screening at two maternity units in London
 - North Middlesex University Hospital
 - Newham Hospital
- Audit Period 01/2009 - 12/2009: baseline data collection
 - Retrospective review of GP records for uptake of HHCs screening and vaccination
- Study Period 11/2010 - 12/2011: intervention vs conventional follow-up of HHCs
 - North Middlesex: **Home delivered DBS testing**
 - Newham: service provision unchanged



Case demographics

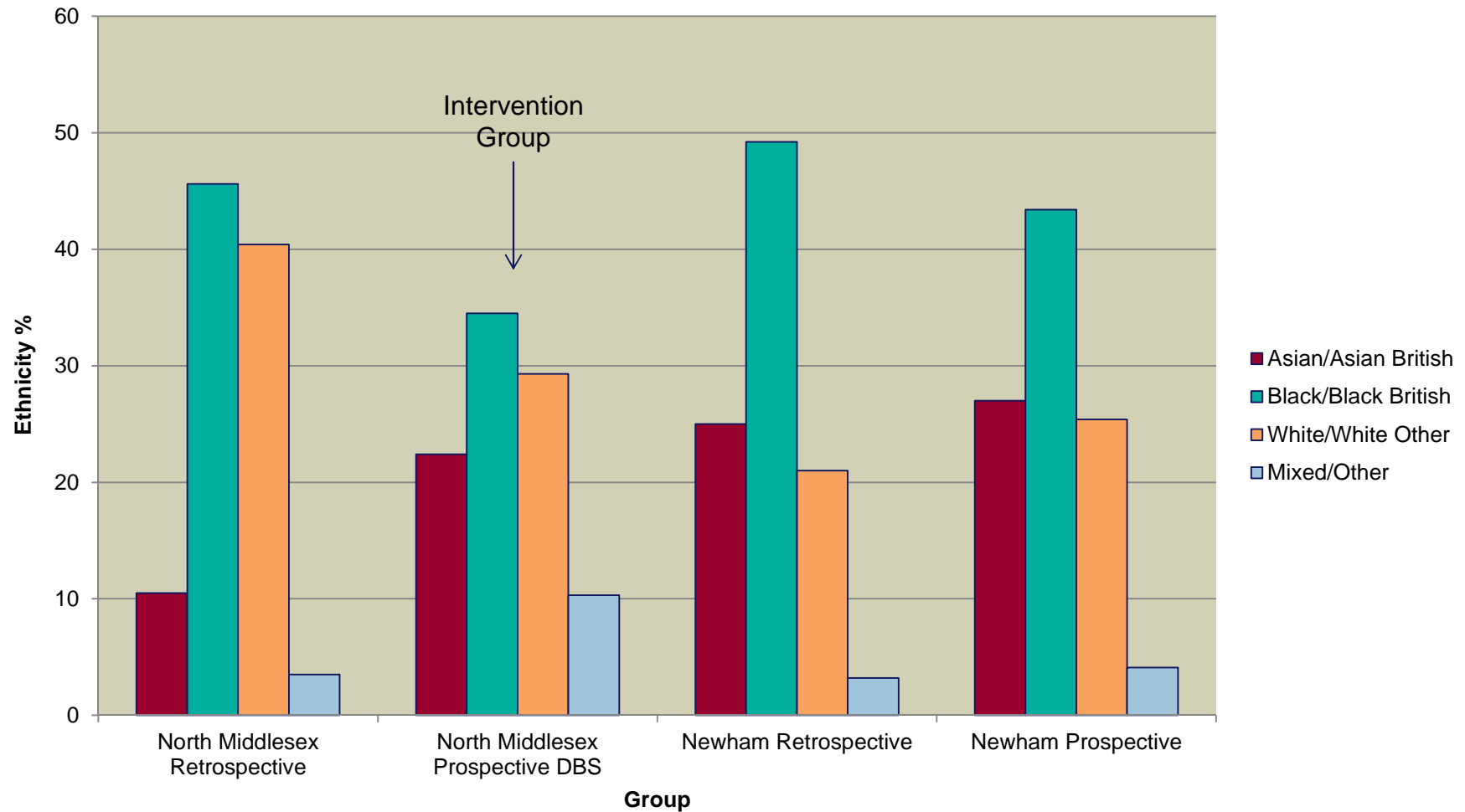
	North Middlesex Retrospective	North Middlesex Prospective DBS	Newham Retrospective	Newham Prospective	<i>p value</i>
No. of Women	57	58	124	122	NA
Median Age	27	26	27	28	0.34*
Age Range	16 - 40	14 - 40	16 - 47	19 - 42	NA
Previously Tested (%)	31 (54.4)	33 (56.9)	43 (34.7)	46 (37.7)	Not Calculated (due to unknowns)
High Risk (%)	4 (7.0)	7 (12.1)	7 (5.6)	17 (13.9)	0.16**

*Kruskal Wallis

**Fishers Exact

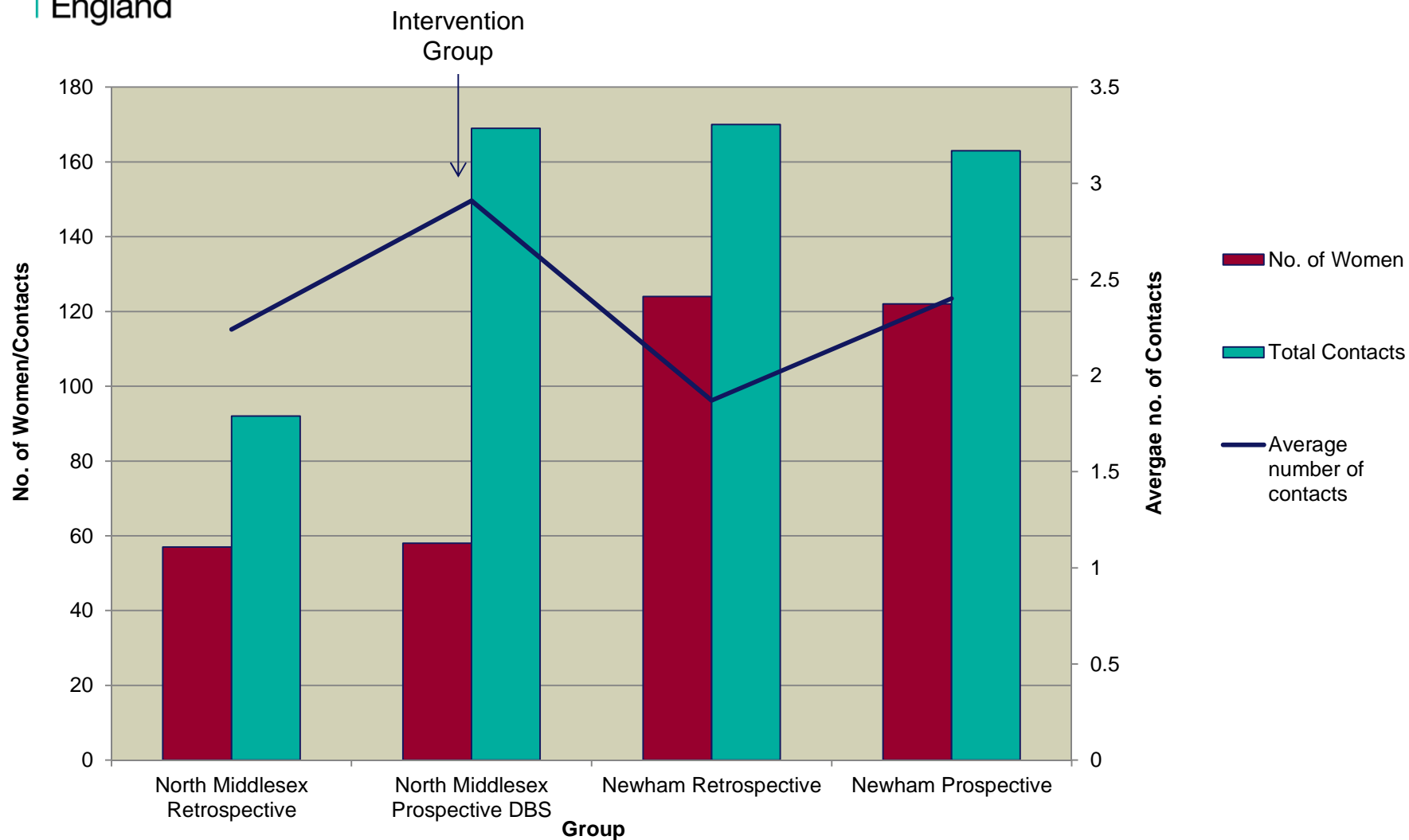


Case demographics: ethnicity





Number of cases and contacts





Characteristics of contacts

	North Middlesex Retrospective	North Middlesex Prospective DBS	Newham Retrospective	Newham Prospective	<i>p value</i>
No of cases with contacts identified (%)	41 (71.9)	58 (100.0)	91 (73.4)	68 (55.7)	<0.001 [^]
Average no. of contacts (Range)	2.24 (0-13)	2.91 (1-8)	1.87 (0-8)	2.40 (0-10)	NA
No. of Contacts	92	169	170	163	NA
Median Age	9	12	13	21	0.03 ^{^^}
Age Range	0 - 49	0 - 54	0 - 73	0 - 65	NA
Child (%)	54 (58.7)	90 (53.3)	65 (38.2)	63 (38.7)	0.005 [*]
Partner (%)	33 (35.9)	56 (33.1)	81 (47.6)	39 (23.9)	<0.003 ^{**}
Other adult (%)	4 (4.3)	23 (13.6)	24 (14.1)	59 (36.2)	

[^]Fishers Exact, ^{^^}Wald Test from Random effects model

^{*} Wald Test from Random effects model Children vs Adults, ^{**} Wald Test from Random effects model Partner vs Other Adults



Uptake of contact screening and vaccination

North Middlesex

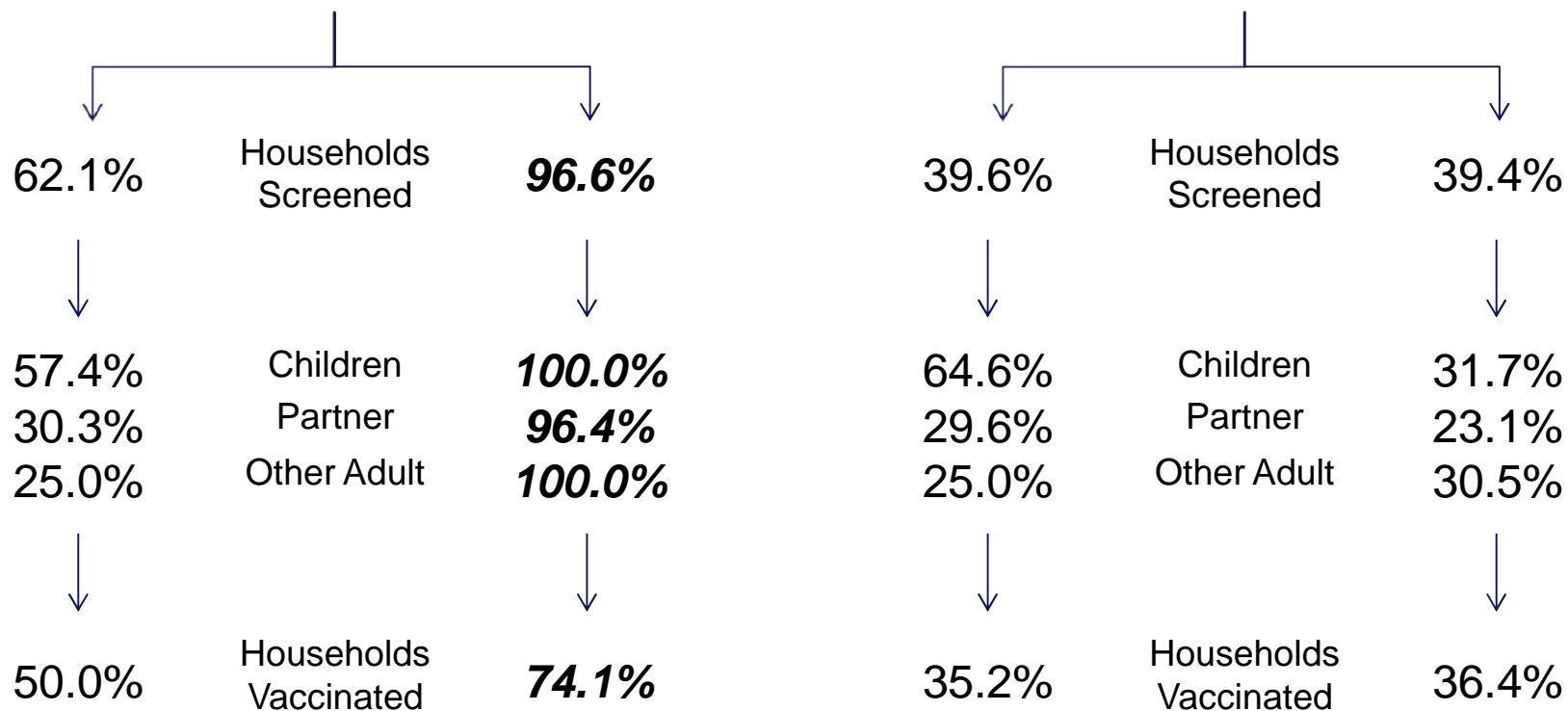
Newham

Retrospective

Prospective DBS

Retrospective

Prospective





Uptake and outcome of screening: children

	North Middlesex Retrospective	<i>North Middlesex Prospective DBS</i>	Newham Retrospective	Newham Prospective
No. of Children	54	90	65	63
No. Screened	31	90	42	20
% Negative	42.6	94.4	23.1	12.7
% Positive (Current)	0.0	5.6 (3.3)	6.2 (6.2)	1.6 (1.6)
% Unknown	14.8	0.0	35.4	17.5
% Not Screened	42.6	0.0	35.4	68.3
% Vaccinated of total contacts	40.7	83.3	21.5	9.5



Uptake and outcome of screening: partners

	<i>North Middlesex Retrospective</i>	<i>North Middlesex Prospective DBS</i>	<i>Newham Retrospective</i>	<i>Newham Prospective</i>
No. of Partners	33	56	81	39
No. Screened	10	54	24	9
% Negative	18.2	33.9	9.9	7.9
% Positive (Current)	3.0 (3.0)	62.5 (21.4)	7.4 (7.4)	5.1 (5.1)
% Unknown	9.1	0.0	12.3	5.1
% Not Screened	63.6	3.57	70.4	76.9
% Vaccinated of total contacts	6.1	12.5	4.9	12.8



Uptake and outcome of screening: other adult HHCs

	North Middlesex Retrospective	<i>North Middlesex Prospective DBS</i>	Newham Retrospective	Newham Prospective
No. of other adults	4	23	24	59
No. Screened	1	23	6	18
% Negative	25	43.5	8.3	16.9
% Positive (Current)	0.0	56.5 (21.7)	8.3 (8.3)	8.5 (8.5)
% Unknown	0.0	0.0	8.3	5.1
% Not Screened	75	0.0	75	69.5
% Vaccinated of total contacts	0.0	30.4	4.2	5.1



Summary and Discussion

- Intervention of home based DBS testing increases screening and vaccination uptake compared to conventional follow up
- Screening uptake more marked in adult contacts than children
- Less impact if negative then vaccinated, or if positive then referred
- Data sharing and service commissioning



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Acknowledgements



GILEAD

Study Nurse; Gwendolene Edwards

Immunisation Dept, Colindale including; Gayatri Amirthalingam, Mary Ramsay, Sema Mandal, Jessica Flood, Kazim Beebeejaun, Shirley Cole, Nick Andrews, Yojna Handoo-das, Sarah Collins

Microbiological Services, Colindale including; John Parry, Samreen Ijaz, Richard Tedder, Justin Shute, John Poh

North Middlesex University Hospital, including; Andrew Millar, Andrew Fox-Lewis
Kobika Sritharan

GP surgeries in North Middlesex and Newham



ANY QUESTIONS??

