The effectiveness of indicator condition based HIV testing across Europe: results from HIDES-2, a prospective multi-centre study

Michael Rayment *on behalf of the HIV Indicator Diseases Across Europe (HIDES) Study Group*

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What is indicator condition based HIV testing?

- Indicator conditions are conditions known to be, or believed to be, associated with an excess risk of being HIV-positive

- There is a paucity of evidence of prevalence of previously undiagnosed HIV in indicator conditions

- Indicator condition based testing may be an effective HIV testing strategy

- Routine HIV testing is cost effective when the undiagnosed HIV prevalence in the target group >0.1%

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Objectives of HIV Indicator Diseases Across Europe Study

- To implement large scale surveys to prospectively assess prevalence of previously undiagnosed HIV in patients presenting for care of putative, non-AIDS defining indicator conditions

Expert opinion

Demonstrate cost effectiveness

LL 95% CI > 0.1%
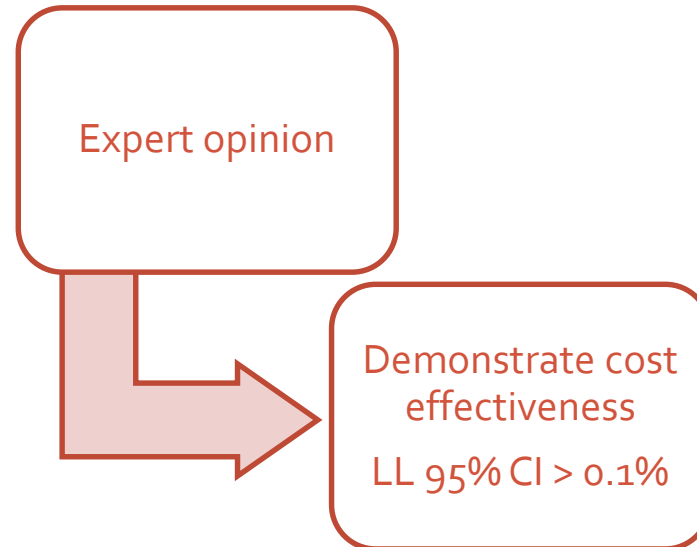
HIV Indicator Diseases Across Europe Study – Phase 2

- Open call to European centres
- Routine offer of HIV test to patients (18-65 yrs) presenting with indicator condition
- Simple demographic data collected; additional data items for those newly diagnosed HIV+
- **Primary endpoint:** demonstration of previously undiagnosed HIV infection >0.1% in each indicator condition (IC)
- Projected n=11 000
- Open 2012 - 2014

Disease Area	Indicator Conditions
Malignancies	Lymphoma Cervical dysplasia or cancer (CIN II and above) Anal dysplasia or cancer (AIN II and above) Primary lung cancer
Viral infections	Hepatitis B infection Hepatitis C infection Hepatitis B & C co-infection Ongoing mononucleosis-like illness
Haematological disorders	Leucocytopaenia and / or thrombocytopaenia Lymphadenopathy
Dermatological	Severe psoriasis Seborrhoeic dermatitis
Other	Pneumonia (hospitalised) Peripheral neuropathy

Enrolment

- 150 surveys were performed, across 42 clinical centres in 20 countries across four regions of Europe

- 10 139 patients were enrolled

- Excluded participants: 668

- Total of **9471** participants

Recruitment by region	Number enrolled	%
Total	**9471**	**100**
South	500	5.3
Central	942	10.0
North	2297	24.3
East	5732	60.5

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Characteristics of participants

- 54% male
- Median age 37 yrs (IQR 29 – 49 yrs)
- 86.6% white
- 14.4% had previously tested for HIV (median time since last test was 1.3 years [IQR 0.4 – 3.2 years])

- Setting of test:

	Number enrolled	%
Outpatient	4500	47.5
Inpatient	3564	37.6
Primary Care	270	2.9
Unknown	1137	12.0

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HIV test positivity (overall)

- **235/9471 individuals tested HIV+**
- **HIV prevalence: 2.5% [95%CI 2.2 – 2.8]**

- Marked variation by region:

Region	Number enrolled	Number HIV+	%	95%CI
All	**9471**	**235**	**2.5**	**2.2 – 2.8**
South	500	25	5.0	3.1 – 6.9
Central	942	10	1.1	0.4 – 1.7
North	2297	31	1.4	0.9 – 1.8
East	5732	169	3.0	2.5 – 3.4

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HIV prevalence by indicator condition

0.1% and LL 95%CI>0.1%

● 95% CI > 0.1
○ 95% CI < 0.1
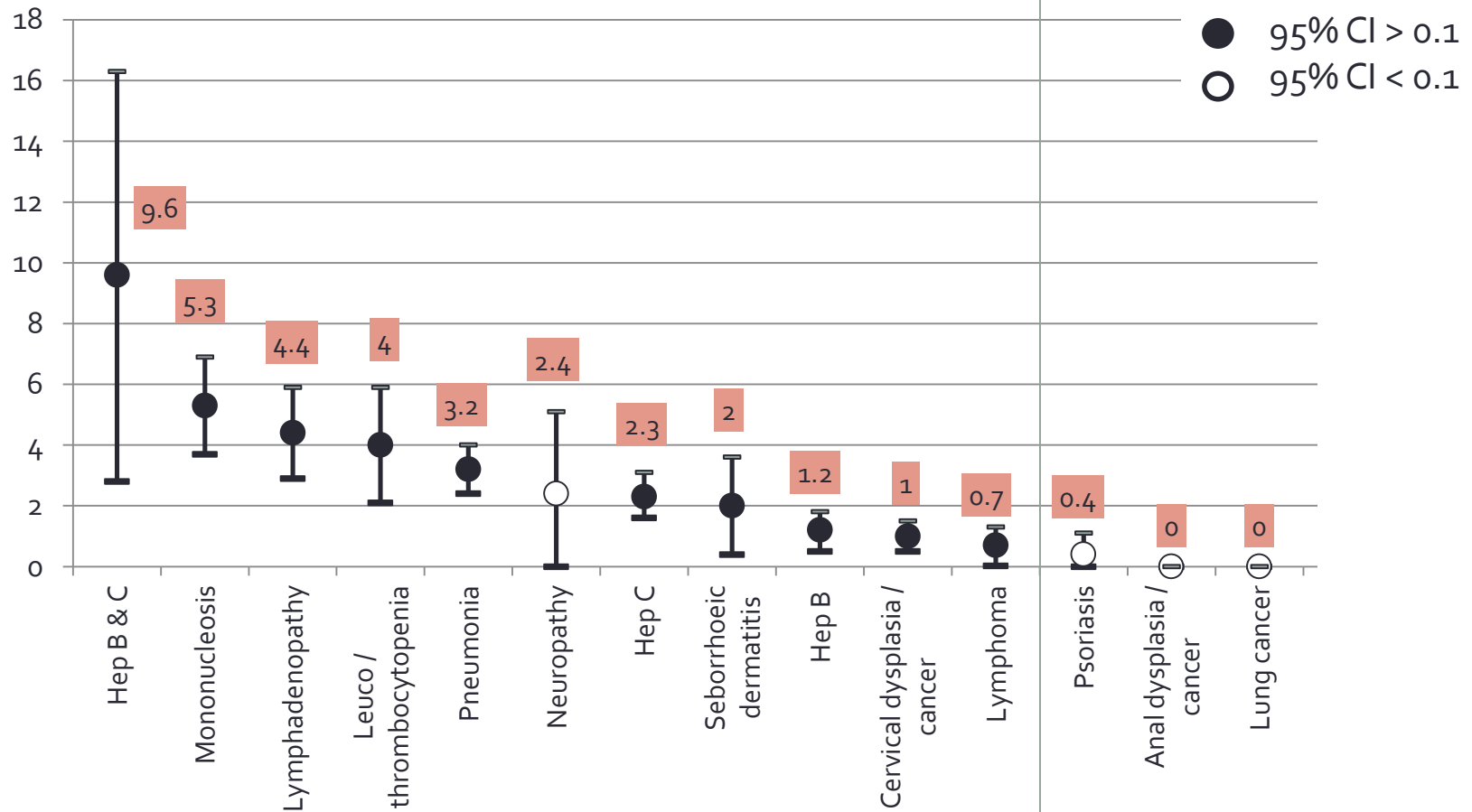
	Hep B & C	Mononucleosis	Lymphadenopathy	Leuco / thrombocytopenia	Pneumonia	Neuropathy	Hep C	Seborrhoeic dermatitis	Hep B	Cervical dysplasia / cancer	Lymphoma	Psoriasis	Anal dysplasia / cancer	Lung cancer
Tested	73	734	401	722	1881	84	1751	299	1126	1339	588	276	53	144
HIV+	7	39	16	32	61	2	41	6	13	13	4	1	0	0

Plotted values: 9.6, 5.3, 4.4, 4, 3.2, 2.4, 2.3, 2, 1.2, 1, 0.7, 0.4, 0, 0

Odds of testing HIV+ by indicator condition (adjusted)

Indicator Condition

Pneumonia

Cervical dysplasia

Hepatitis B

Hepatitis C

Mononucleosis-like illness

Leuco / thrombocytopaenia

Lymphadenopathy

All others

Model adjusted for gender, ethnicity, previous HIV testing history, European region, setting, age, date, and number from centre

0.1   1   10

Adjusted odds of testing HIV+ (95% CI)

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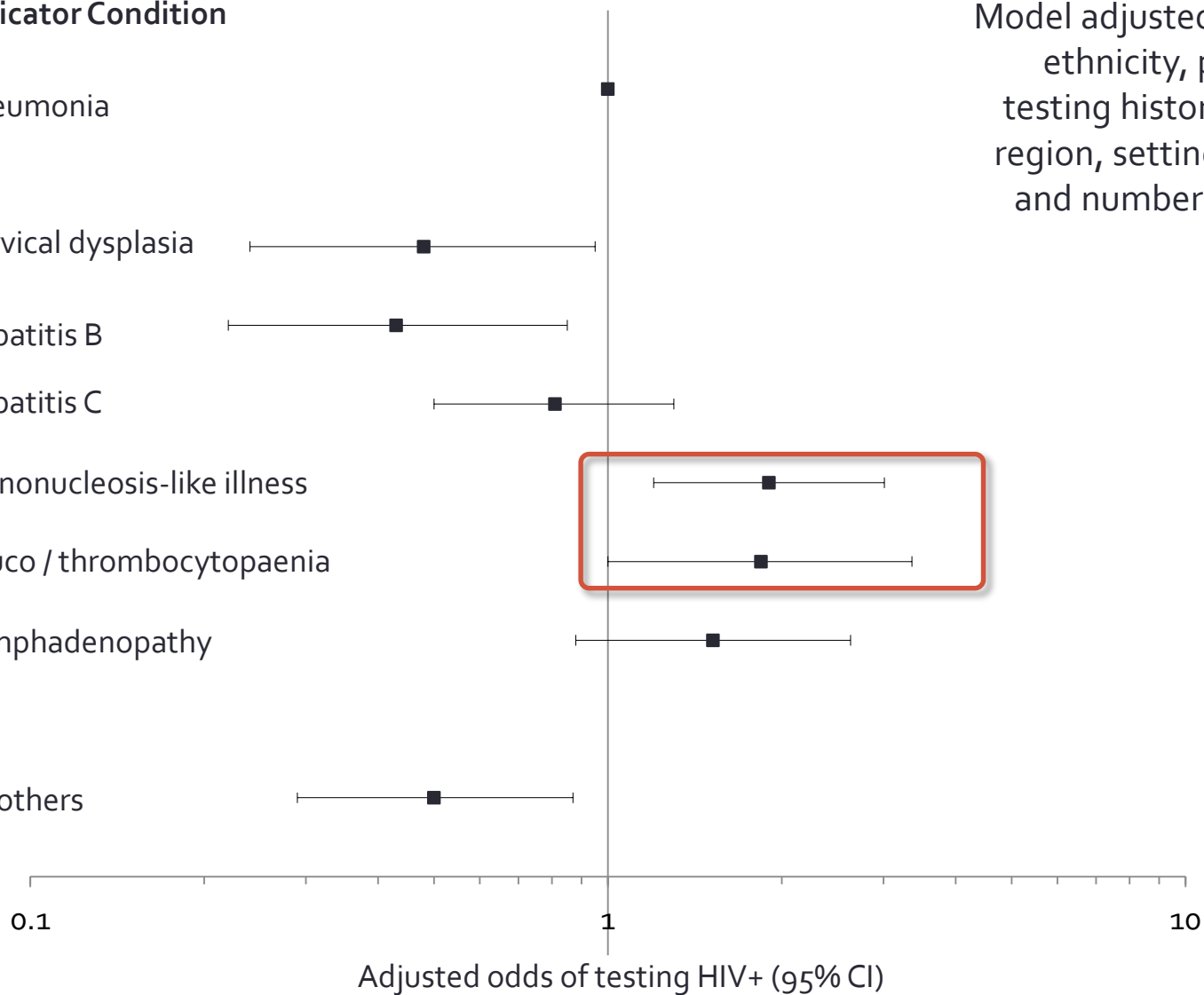
Stage of presentation

- Median CD4 count at diagnosis was 200 cells/μl (IQR 65 – 390)

- 71.9% (143/235) were late presenters (defined as CD4<350 cells/μl)

- 28.2% (61/216) persons reported prior minor HIV-associated symptoms

- In multivariate analysis, older persons were more likely to be late presenters, as were those seen outside of outpatient departments. Of note, IC and region did not predict late presentation

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Conclusions

- Cost effectiveness was established for ten of 14 ICs, in which an HIV prevalence >0.1% was definitively demonstrated

- For the remaining conditions, relatively low numbers of patients were tested, and there were few events

Recommendations and ongoing work

- The conditions with a proven HIV prevalence of >0.1% should be adopted into HIV testing and IC specialty guidelines on both national and European level

- Audits of testing performance in indicator conditions should be performed to evaluate the level of implementation

- An extension of the survey in mononucleosis-like illness is continuing until end of June 2015

- An EU funded project on "Optimising Testing and Linkage to Care for HIV across Europe" (OptTEST) will build on and develop tools for the implementation of IC-guided testing

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Acknowledgments