# European students planning to practice internal medicine are more likely to have condition-focused, than behaviour-focused approach to HIV testing

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HIV and Viral Hepatitis 2014: Challenges of Timely Testing and Care
Missed opportunities for earlier diagnosis

# Rationales

- A large proportion of HIV-positive persons is unaware of their status

- Expanding HIV testing is recongised as major tool in halting the epidemic

- HIV test is too rarely recommended by clinicians

- To understand this situation we have investigated knowledge on HIV testing among fifth year medical students („almost doctors")

Hamers FF & Phillips AN, Diagnosed and undiagnosed HIV-infected populations in Europe HIV Medicine (2008), 9 (Suppl. 2), 6–12
Cohen MS et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011;365:493–505
Hall HI et al. HIV Transmission Rates from PLVHA who are aware and unaware of their infection, United States AIDS 2012
UNAIDS, Global report: UNAIDS report on the global epidemic 2012

# Methods

- Fifth year students were pre-tested when entering the infectious diseases course

- Questionnaires were anonymous and covering three areas:
  - medical practice
  - transmission risk
  - indications for HIV testing

- Answers were scored according to a pre-defined scoring system

# Methods

Indications for HIV testing scoring:

- Correct:
  - pregnancy **OR** sexual contacts/STI
  - **AND** relevant medical condition(s)
- Somewhat correct:
  - only relevant medical conditions
- Incorrect :
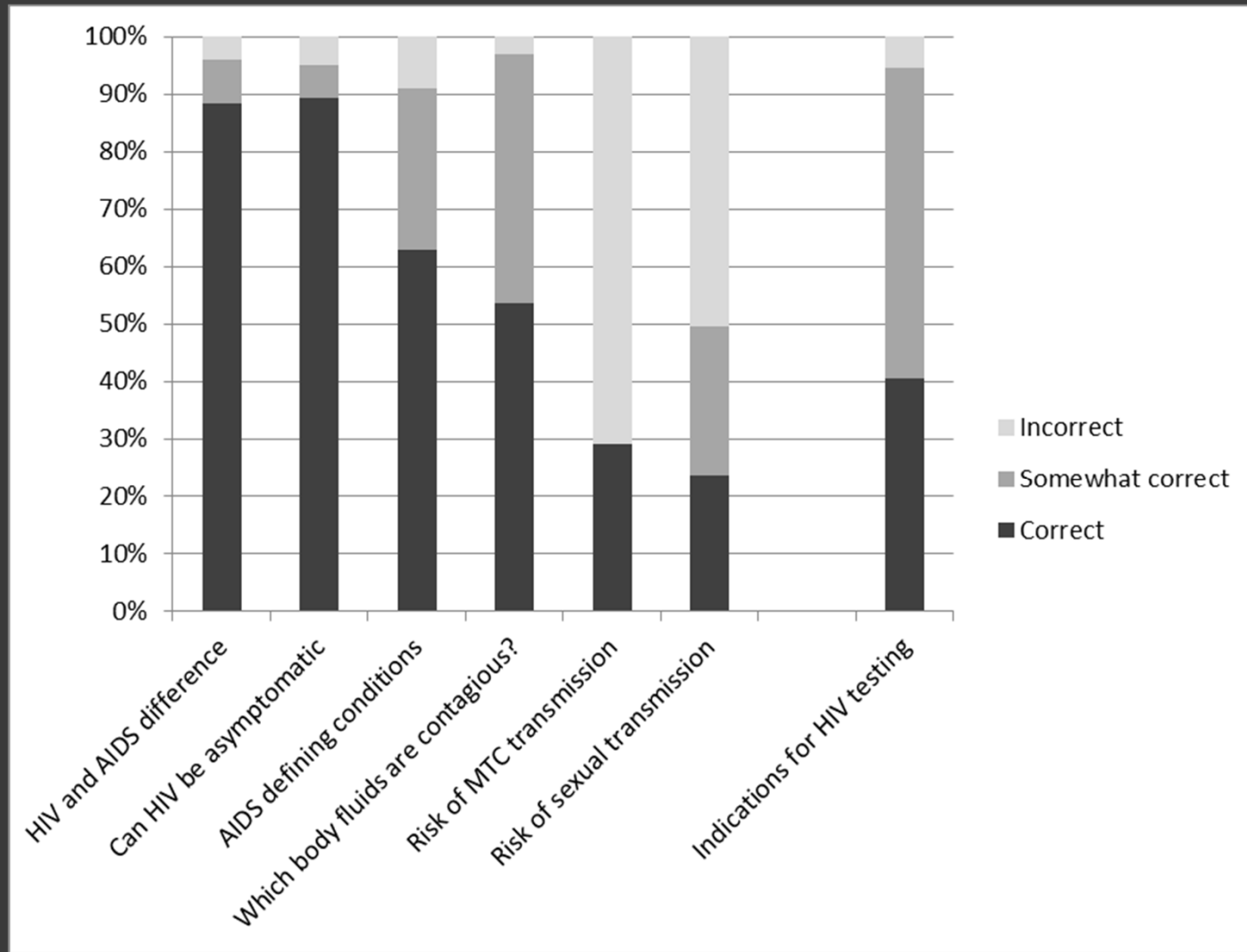  - Non-relevant medical conditions

# Methods

- Chi-squared and Kruskal-Wallis tests were used for group comparison as appropriate (tests of significance were two-sided)

- A multivariable logistic regression model was developed including all variables with $p < 0.1$ in univariable models

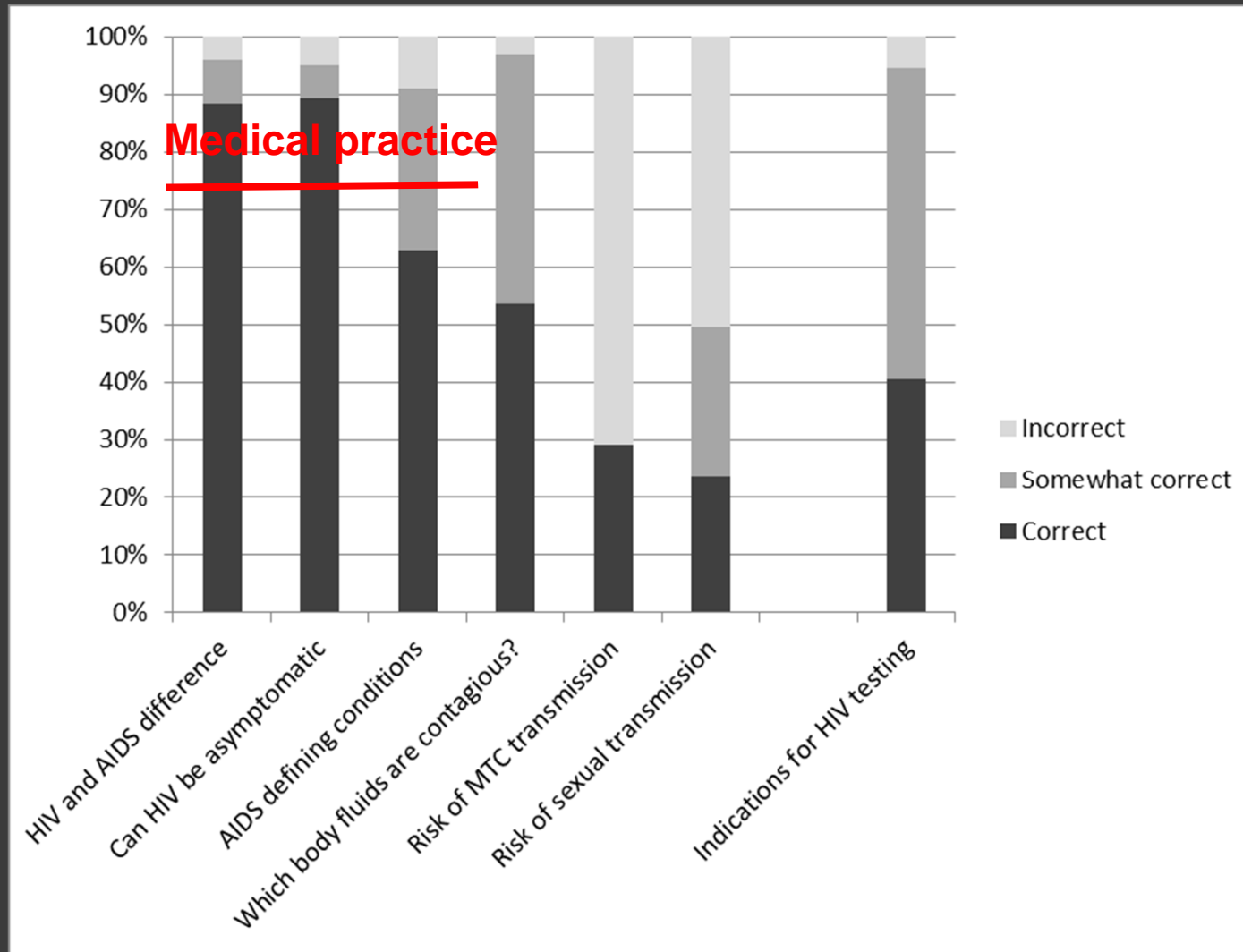- Confidence interval (CI) of 95% was accepted

# Results

- In total 224 students were included
  - Europe (64%; 39% from Poland),
  - Asia (24%),
  - North Africa (6%)
  - North America (5%)

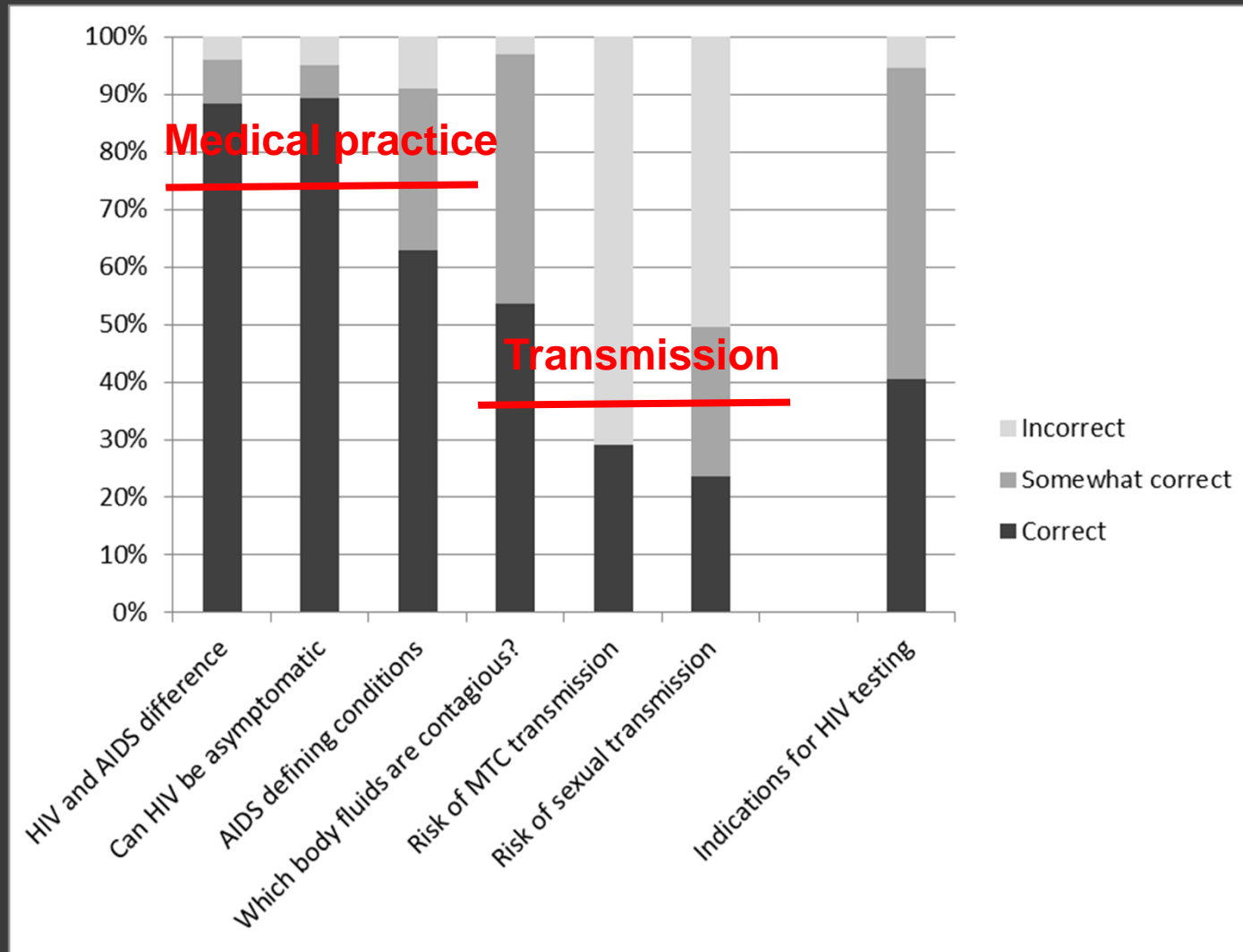- 73% were from high income countries*
- 64% were women

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  - Non-relevant medical conditions

# Results

Indications for HIV testing:

- Correct: **41%**
  - pregnancy **OR** sexual contacts/STI **12% / 39%**
  - **AND** relevant medical condition(s)
- Somewhat correct: **54%**
  - only relevant medical conditions
- Incorrect : **5%**
  - Non-relevant medical conditions

# Discordant answers

- 28% estimated MTC risk as > 50% and **DID NOT** included pregnancy as indication for HIV testing

- 20% estimated MSM risk as >10% and **DID NOT** indicated sexual contacts as indication for HIV testing

# Results – baseline characteristics

| Characteristic | Correct testing N= 91 | Incorrect testing N=133 | P value |
|---|---|---|---|
| Age (mean, SD) | 24.3 (2.3) | 23.9 (1.9) | 0.33 |
| Female (N,%) | 60 (65.9) | 83 (62.4) | 0.67 |
| Region (N,%) | | | 0.04 |
| North America | 8 (8.8) | 3 (2.3) | |
| North Africa | 5 (5.5) | 9 (6.8) | |
| Asia | 27 (29.7) | 28 (21.0) | |
| Europe | 51 (56.0) | 93 (69.9) | |
| Income (N,%) | | | 0.20 |
| High | 62 (68.1) | 101 (75.9) | |
| Middle | 29 (31.9) | 32 (24.1) | |
| Specialty (N,%) | | | 0.71 |
| Surgicaly related | 20 (22.0) | 30 (22.6) | |
| General medicine | 32 (35.2) | 54 (40.6) | |
| Obstetrics/pediatrics | 25 (27.5) | 28 (21.0) | |
| Unknown | 14 (15.4) | 21 (15.8) | |

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# Medical practice

| Characteristic | Correct testing N= 91 | Incorrect testing N=133 | P value |
|---|---|---|---|
| **What is the difference between HIV and AIDS?** | | | 0.13 |
| **Incorrect** | 4 (4.4) | 5 (3.8) | |
| **Somewhat correct** | 3 (3.3) | 14 (10.5) | |
| **Correct** | 84 (92.3) | 114 (85.7) | |
| **Name three most common HIV-related diseases or conditions.** | | | 0.76 |
| **Incorrect** | 8 (8.8) | 12 (9.0) | |
| **Somewhat correct** | 28 (30.8) | 35 (26.3) | |
| **Correct** | 55 (60.4) | 86 (64.7) | |
| **Can HIV infection be asymptomatic?** | | | 0.013 |
| **Incorrect** | 0 (0.0) | 11 (8.3) | |
| **Somewhat correct** | 4 (4.4) | 9 (6.7) | |
| **Correct** | 87 (95.6) | 113 (85.0) | |

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# Risk of HIV transmission

| Characteristic | Correct testing N= 91 | Incorrect testing N=133 | P value |
|---|---|---|---|
| **Which body fluids can be contagious?** | | | 0.97 |
| **Incorrect** | 3 (3.3) | 4 (3.0) | |
| **Somewhat correct** | 40 (44.0) | 57 (42.9) | |
| **Correct** | 48 (52.7) | 72 (54.1) | |
| **What is the risk of mother-to-child HIV transmission in %?** | | | 0.52 |
| **Incorrect** | 61 (67.0) | 98 (73.7) | |
| **Correct** | 30 (33.0) | 35 (26.3) | |
| **What is the risk of HIV transmission in unprotected sexual contacts in %? (for heterosexual and MSM contact)** | | | 0.89 |
| **Incorrect** | 47 (51.6) | 66 (49.6) | |
| **Somewhat correct** | 22 (24.2) | 36 (27.1) | |
| **Correct** | 22 (24.2) | 31 (23.3) | |

# ODDS RATIO FOR WRONG HIV TESTING

**Unadjusted** **Adjusted**

**Region (vs Asia)**

North America

North Africa

Europe

**Specialty (vs unknown)**

Obstetrics / Pediatrics

Surgical

Internal Medicine

**MTC transmission risk** (per 5% increase)

**MSM transmission risk** (per 5% increase)

**Can HIV be asymptomatic?** (per 1 scoring unit increase)

0    1                                                                                    15
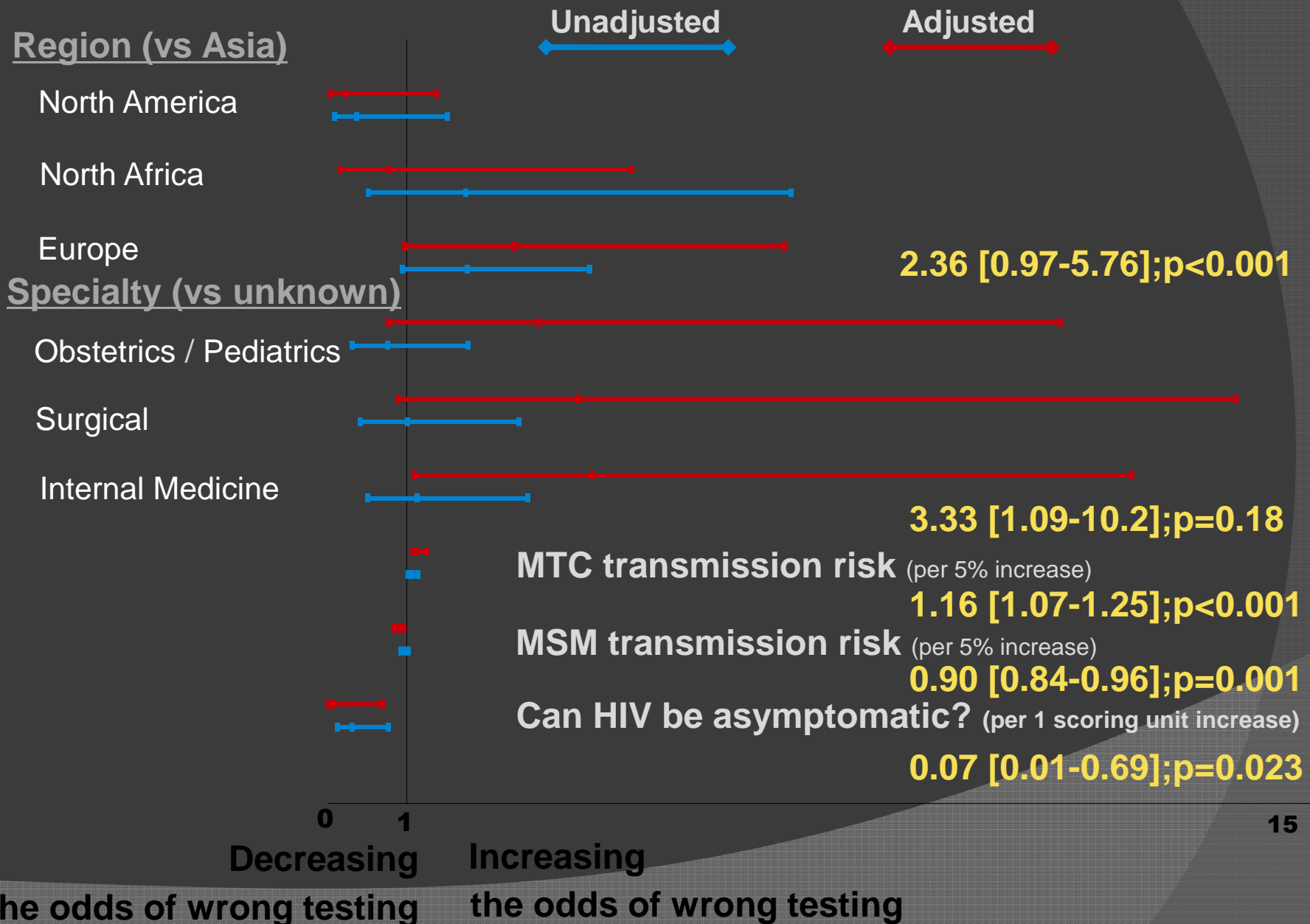
**Decreasing    Increasing**

**the odds of wrong testing    the odds of wrong testing**
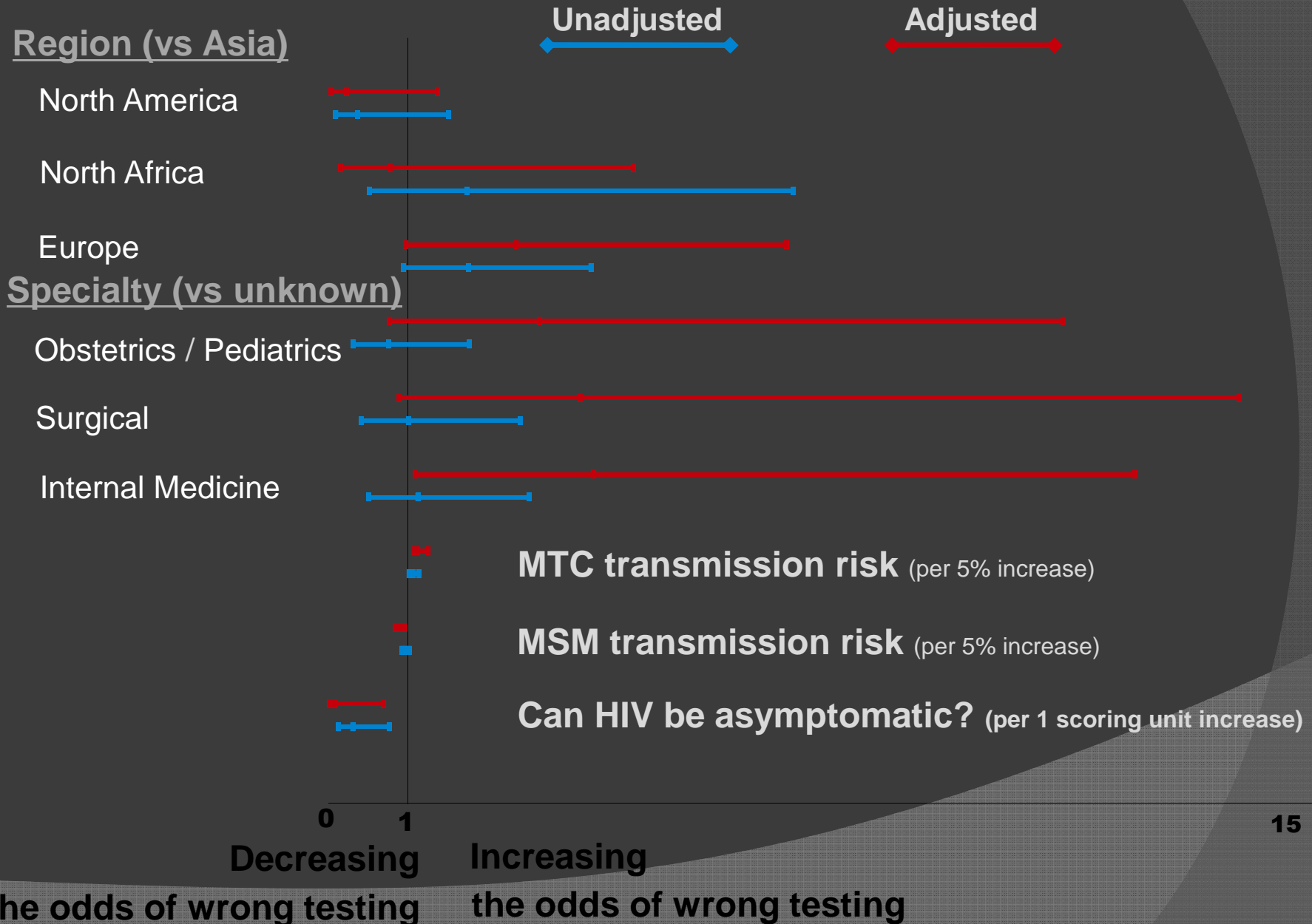
ODDS RATIO FOR WRONG HIV TESTING
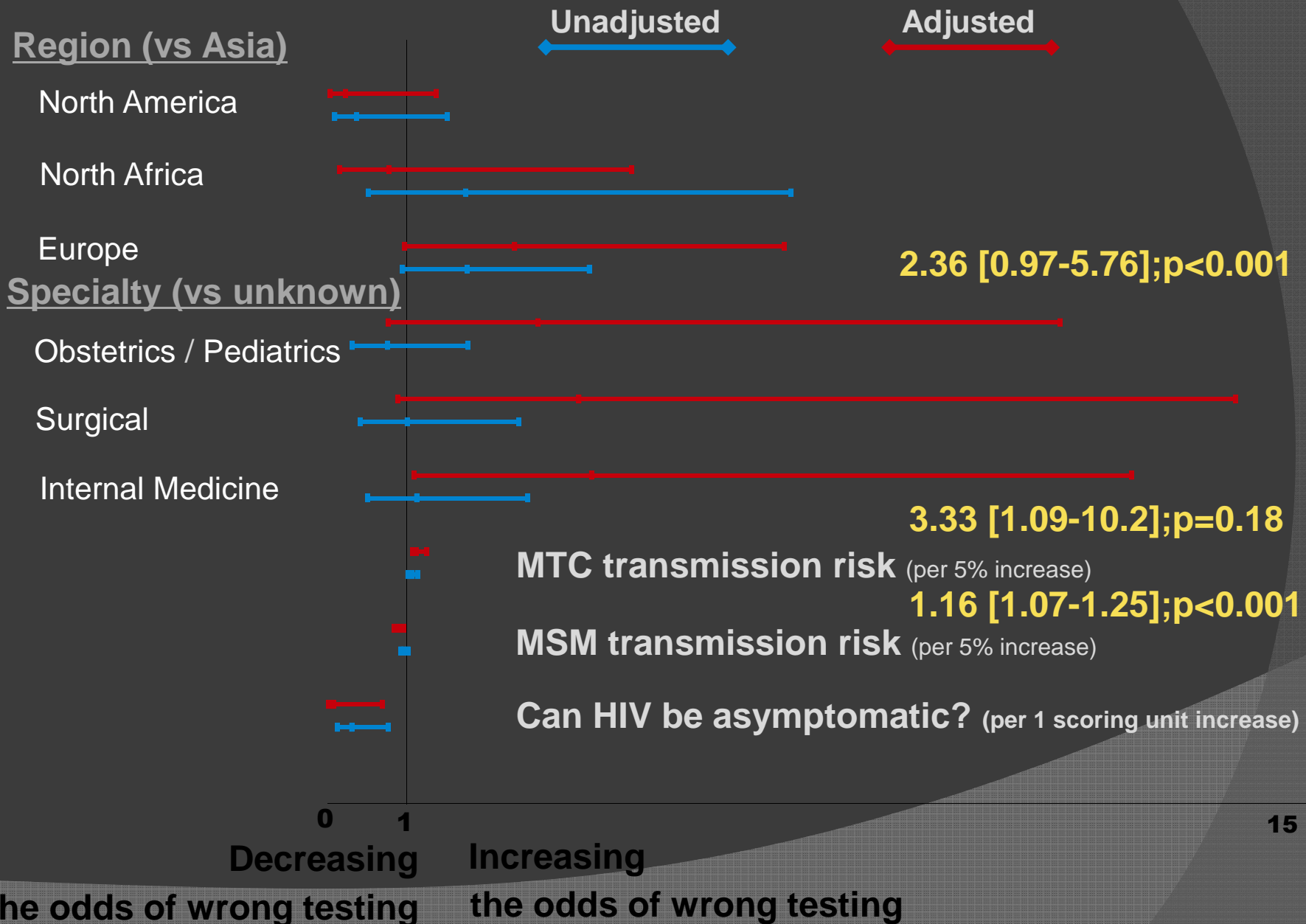
ODDS RATIO FOR WRONG HIV TESTING

# Conclusions

- Students tend to represent condition-focused HIV testing approach

- they underscore the role of behavioral factors and the asymptomatic character of HIV infection

- this is especially relevant for European students planning to practice internal medicine

# Perspectives

- To evaluate students' knowledge across Europe

- Introduce more on HIV testing earlier in medical studies

- More on HIV testing during specific classes/sections

# Thank you