OptTEST Kick-off Meeting. 2nd Sept 2014
Jean Monet Building,
EU Commission,
Luxembourg

Cost-effectiveness of HIV testing strategies

Kristi Rüütel (Estonia)
Yaiza Rivero, Julia de Amo (Spain)
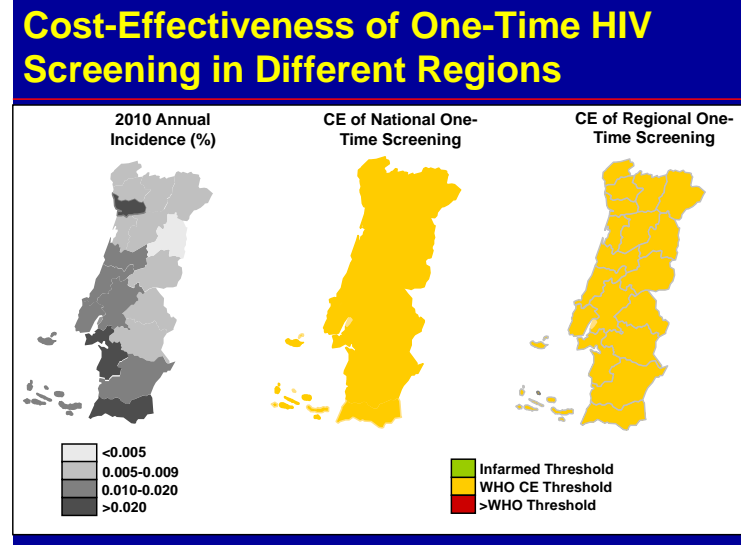Guillaume Mabileau, Yazdan Yazdapanah (France)

Objectives

To evaluate the cost, effectiveness, and cost-effectiveness of different **one time testing** strategies

- Strategies targeting **at risk populations**/ symptomatic populations
  - *Within the health care system:*
    - HIV testing in STD clinics, TB and hepatitis clinics,
    - HIV testing in Voluntary Counselling and Testing (VCT) Units,
    - Enhanced Targeted HIV Screening using clinical prediction tools developed to identify patients with increased probability of undiagnosed HIV,
    - Indicator-condition guided testing

  - *Within the community (Community-based HIV testing programs)*
    - Mobile testing using rapid tests,
    - Home self-testing

Objectives

To evaluate the cost, effectiveness, and cost-effectiveness of different **one time testing** strategies

- Strategies targeting **at risk populations**/ symptomatic populations

- **Systematic HIV screening**
  - Routine testing of men,
  - Routine testing of migrants from sub-Saharan Africa
  - Routine testing of a region above a threshold
  - Routine testing of the general population.

Cost-Effectiveness of One-Time HIV Screening in Different Regions

2010 Annual Incidence (%) | CE of National One-Time Screening | CE of Regional One-Time Screening

<0.005
0.005-0.009
0.010-0.020
>0.020

Infarmed Threshold
WHO CE Threshold
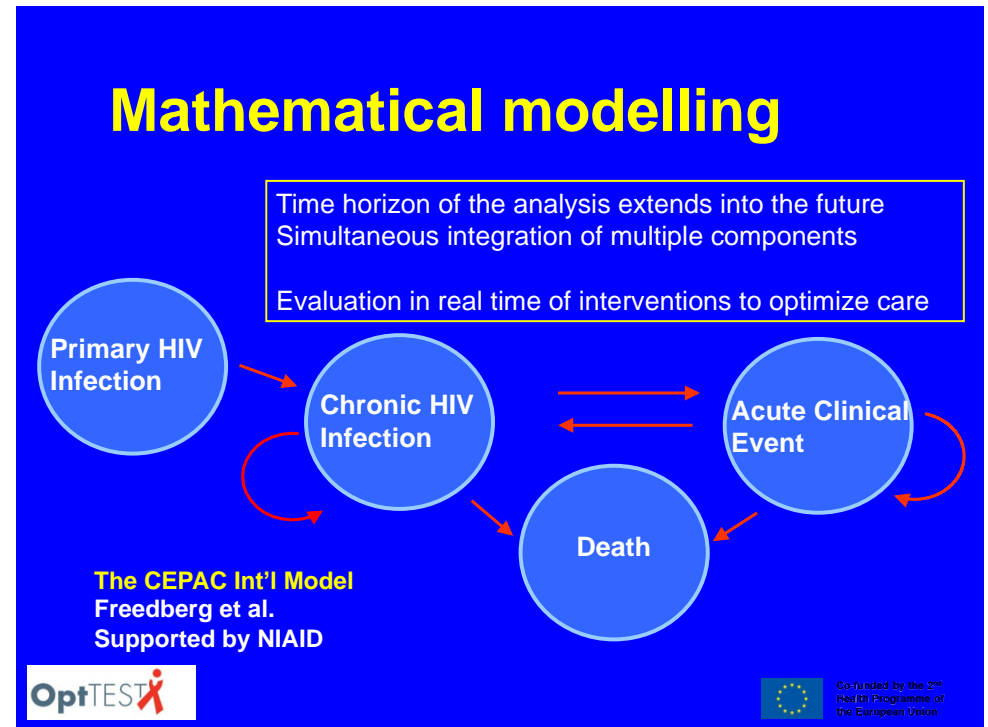>WHO Threshold

Objectives

To evaluate the cost, effectiveness, and cost-effectiveness of **different testing frequencies in at risk populations**: PWID; MSM; sub-Saharan Africa Migrants

- What should be the Frequency
  - 1/year
  - 1/3 months
  - 1/month

- How should we increase frequency
  - SMS
  - Mobile testing using rapid tests,
  - Home self-testing
  - Incentives

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- Focus of analysis **France, Spain, and Estonia**.
- Findings are to be extrapolated to other European countries to produce country/regional-specific guidance tools for choosing cost-effective testing strategies.

Study Design

- Mathematical modelling : Cost-Effectiveness of Preventing AIDS Complications (CEPAC), a widely published Monte Carlo simulation model of the detection, natural history and treatment of HIV disease.

Mathematical modelling

Time horizon of the analysis extends into the future
Simultaneous integration of multiple components

Evaluation in real time of interventions to optimize care

Primary HIV Infection

Chronic HIV Infection

Acute Clinical Event

Death

The CEPAC Int'l Model
Freedberg et al.
Supported by NIAID

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Input data: To assess country-specific information regarding

- HIV testing policies
- Current performance of testing strategies to be evaluated
  - prevalence and incidence of HIV
  - prevalence of undiagnosed HIV
  - % linked to care;
  - CD4 at HIV testing/HIV care
- Direct costs of routine HIV medical care

Selected Input Parameters

Routine HIV Screening in Portugal: Clinical Impact and Cost-Effectiveness

Yazdan Yazdanpanah[1,2*], Julian Perelman[3], Madeline A. DiLorenzo[8,9], Joana Alves[3], Henrique Barros[4], Céu Mateus[3], João Pereira[3], Kamal Mansinho[5], Marion Robine[8,9], Ji-Eun Park[8,9], Eric L. Ross[8,9], Elena Losina[7,8,9,10,11,13], Rochelle P. Walensky[6,7,8,9,10,11], Farzad Noubary[14,15], Kenneth A. Freedberg[6,7,8,9,11,12], A. David Paltiel[16]

Variable	Value	Reference
Undiagnosed HIV prevalence	0.16%	Portuguese National Institute of Health 2010; Hammers & Philips, *HIV Med,* 2008
Annual incidence	0.02%	INSA 2010
Test offer/acceptance rate	63.2%	Assumption + Jauffret-Roustide, *BEH*, 2006
Linkage to care rate	78.4%	Portuguese CAD Report, 2010
Mean CD4 at care initiation	292 cells/µL	2010 Survey at 3 Portuguese Hospitals
HIV rapid test cost	5.40€	Ordinance 839-A/2009
Cost of 1st Line ART (EFV + TDF/FTC)	732.05€	Portuguese Central Administration of the Health System, 2010

Monitoring and evaluation

- **Baseline data (Month 6)**
  - country-specific information regarding HIV testing policies
  - <u>performance of testing strategies to be evaluated (% of HIV positive; % linked to care; CD4 at HIV testing/HIV care by month 18)</u>

- **Output Indicators (Month 24/28)**
  - Production of Data on survival benefits, cost and cost-effectiveness of different strategies

Dissemination

- Workshops at country level (researchers, surveillance & public health departments workers, policy makers) :
  - validate input data
  - validate results of the analysis
  - Disseminate pertinent information (Health care providers)
- Communication summaries disseminated to relevant stakeholders at M12, 24 and 36
- Publications in Journals/ presentations of findings national & international journals/conferences
- Recommendations for national HIV testing guidelines

Partners

- NIHD, Estonia (K Rüütel)
- ISCIII, Spain (Y Rivero, J de Amo)
- Inserm, France (G Mabileau, Y Yazdapanah)
- Harvard Center for AIDS Research (KA Freedberg, R Walensky)
- Yale School of Medicine and Harvard Medical School (D Paltiel)

WP Scientific Comitee

- Researchers working on CE of HIV testing
  - Glasgow University (O.Wu)
  - Univeristy College London (A Philipps)
  - University of Lisbonne (J Pelerman)
  - University of Bristol (NK Martin)
  - Euro HIV-edat (TBC)
  - …
- Institutions
  - eCDC
  - WHO
- Other WP leaders