

Can HIV be cured?

THE  TIMES

British scientists hopeful for HIV cure

Jonathan Leake, Science Editor

October 2 2016, 12:01am,
The Sunday Times



The trial is a collaboration between five leading universities
BURGER/PHANIE

A British man with HIV hopes to become the first in the world to be cured of the disease by using a pioneering new therapy designed to eradicate the virus.

The 44-year-old is the first of 50 people to complete a trial of the ambitious treatment, designed by scientists and doctors from five of Britain's leading universities.

It is the first therapy created to track down and destroy HIV in every part of the body – including in the dormant cells that evade current treatments. If successful it offers hope of an irreversible cure for HIV and could save the NHS millions of pounds.

BUT

Community: Great interest
 Volunteer for studies

“It is important that the clinician does not promise too much and they provide a realistic perspective on risks and plausible outcomes”

“CURE”

Difficulties

1. 37M infected - **costs**
2. Re-infection - 20% Hep C
- ? Will take PREP
3. Proof of concept (1) pat.
2x total body irradiation
V. severe G.V.H.
Not a repeatable experiment
4. Should not be allowed to impede research in
“more important areas”

A Cure for HIV Infection: “Not in My Lifetime” or “Just Around the Corner”?

Michael M. Lederman¹, Paula M. Cannon², Judith S. Currier³, Carl H. June⁴, Hans Peter Kiem⁵, Daniel R. Kuritzkes⁵, Sharon R. Lewin⁶, David M. Margolis⁷, Joseph M. McCune⁸, John W. Mellors⁹, Timothy W. Schacker¹⁰, Rafick P. Sekaly¹, Pablo Tebas⁴, Bruce D. Walker¹¹, and Daniel C. Douek¹²

¹Case Western Reserve University School of Medicine, Cleveland, OH

²University of Southern California, Los Angeles, CA

³University of California, Los Angeles, Los Angeles, CA

⁴University of Pennsylvania, Philadelphia, PA

⁵Harvard University, Boston, MA

⁶The Peter Doherty Institute for Infection and Immunity, The University of Melbourne and Royal Melbourne Hospital; Department of Infectious Diseases, Alfred Hospital and Monash University, Melbourne, Australia

⁷University of North Carolina at Chapel Hill, Chapel Hill, NC

⁸University of California, San Francisco, San Francisco, CA

⁹University of Pittsburgh, Pittsburgh, PA

¹⁰University of Minnesota, Minneapolis, MN

¹¹Harvard University and Massachusetts Institute of Technology, Cambridge, MA

¹²Vaccine Research Center, National Institutes of Health, Bethesda, MD

“It is our task in science and society at large to prove the conventional wisdom wrong and to make our unpredictable dreams come true” - Freeman Dyson

“The dreams that we do not dream do not come true”

Freeman Dyson

“Increases in CO₂ in the atmosphere does more good than harm. Humanity does not face an existential crisis. Climate change is not a scientific mystery but a human mystery”

Research - modesty



Antonie van Leeuwenhoek



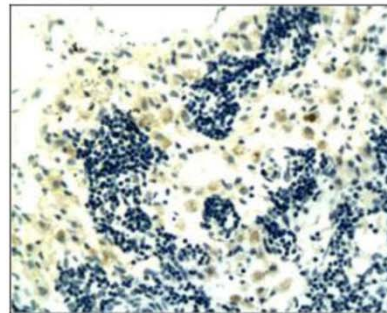
Georges J.F. Köhler



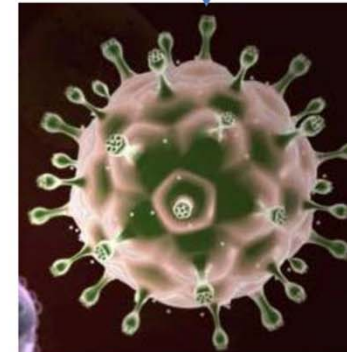
César Milstein



Niels K. Jerne



Kary Mullis



Science

Collaboration rather than competition and sometimes **contrition**

1 large properly funded study

No further optimistic reports to get more funding

EFFECT OF HIV ANTIBODY VRC01 ON VIRAL REBOUND

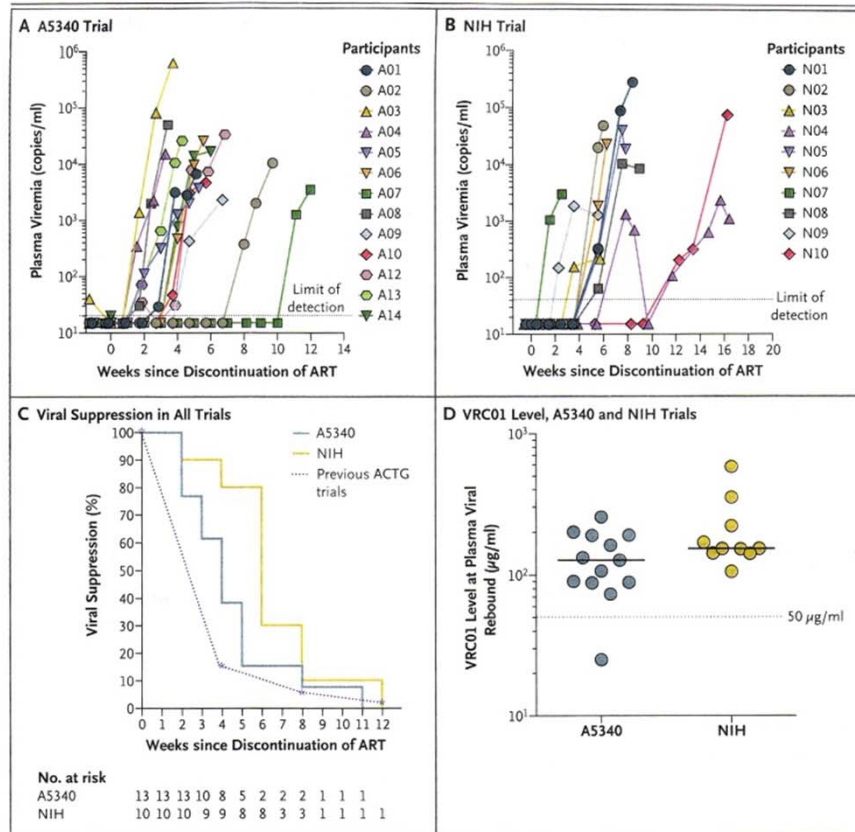
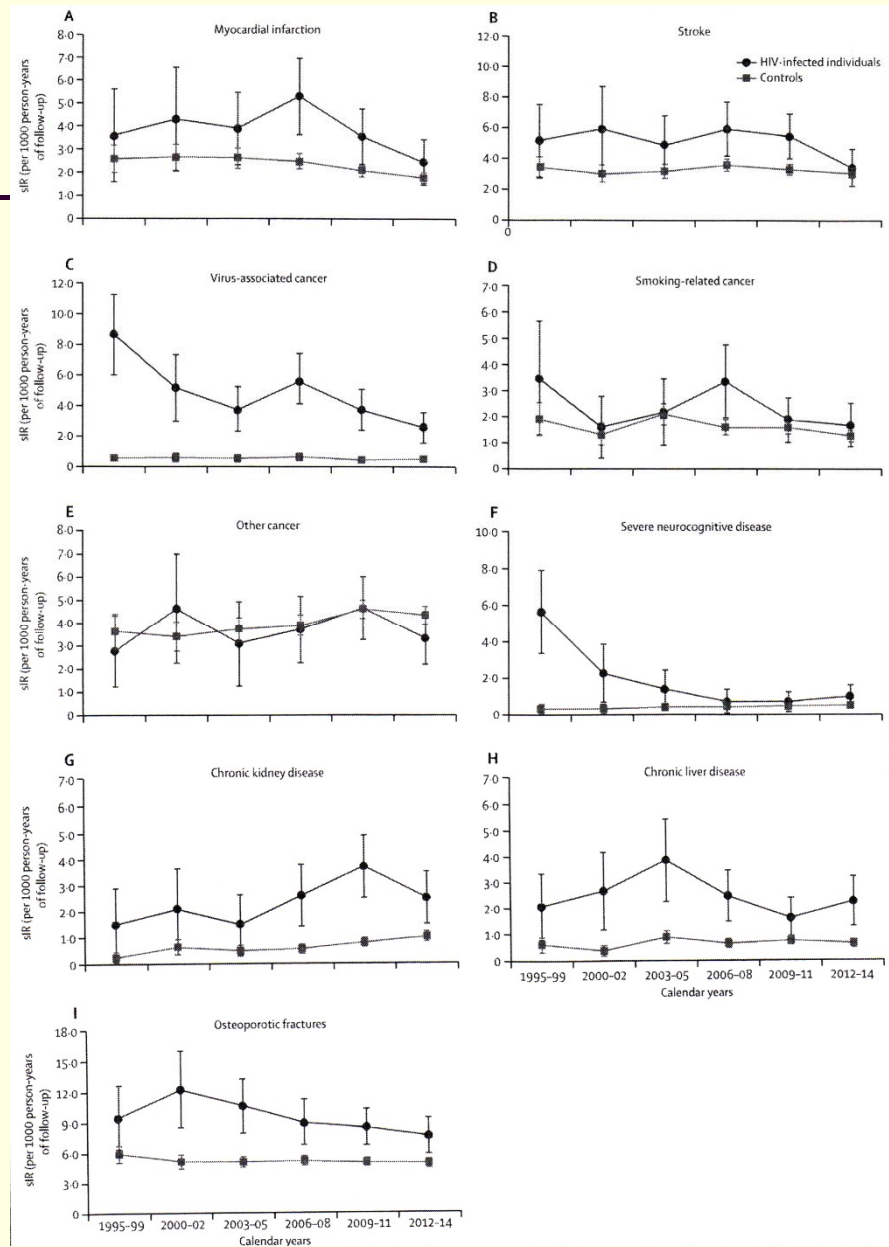


Figure 2. Plasma Viremia and Levels of VRC01 in Trial Participants after Discontinuation of ART.

Panel A shows the plasma viremia of participants in the A5340 trial after the interruption of therapy. The gray dotted line indicates the limit of detection of the assay (HIV RNA level, 20 copies per milliliter). Panel B shows the plasma viremia of NIH trial participants after interruption of therapy. The gray dotted line indicates the limit of detection of the assay (HIV RNA level, 40 copies per milliliter). Panel C shows the Kaplan–Meier curve of plasma viral suppression (<200 copies per milliliter) after VRC01 administration and analytic treatment interruption in A5340 and NIH trial participants as compared with historical participants in AIDS Clinical Trials Group (ACTG) trials who underwent interruption of therapy without other immunotherapeutic interventions. Panel D shows in vivo plasma levels of VRC01 at the first detectable plasma viremia. The limit of detection of VRC01 was less than 0.98 µg per milliliter.



Towards a realistic cure

HIV in Europe Initiative Objectives

To highlight the rising number of people living with HIV in Europe who are unaware of their serostatus

To identify political, structural, clinical and social barriers to achieving optimal testing and counselling, and earlier care for HIV/AIDS

To promote public health best practices and guidance found in Europe with regard to HIV testing, counselling and care



HIV in Europe

HIV & HCV Testing Online Resource Centre

Will be available on the HIV in Europe website

Content scope and categories:

- HIV & HCV diagnosis, testing rates and testing strategies
- Cost effectiveness of HIV & HCV testing
- National policies on HIV & HCV testing in the WHO European Region
- European/international level HIV & HCV testing policies

HIV & HCV Testing Online Resource Centre

The objective of the online resource centre is to create and maintain an online body of resources that will inform the public health and public policy dimensions of HIV and HCV testing and linkage to care.

The target audience for the HIE resource centre consists of HIV and hepatitis stakeholders across Europe, including: Policy makers, clinical and public health researchers, civil society.

Content scope and categories in the resource centre consist of:

1. HIV & HCV diagnosis, testing rates and testing strategies
2. Cost effectiveness of HIV & HCV testing
3. National policies on HIV & HCV testing in the WHO European Region
4. European/international level HIV & HCV testing policies

When accessing the pages and you wish to search more specifically you can use the CTRL F function.

HIV testing cost effectiveness

[New! Emergency department registration rates for HIV screening is cost-effective](#)
Hsieh, Y. H. - Holgrave, D. R. - Peterson, S. - Saydos, C. A. and Rothman, R. E. AIDS Care Apr 2016;28(4):483-6. doi: 10.1080/09540121.2015.1099603 Epub 2015 Oct 16

[The Epidemiologic and Economic Impact of Improving HIV Testing, Linkage, and Retention in Care in the United States](#)
Shah, M. - Rishel, K. - Berry, S. A. and Dowdy, D. W. Clinical infectious diseases - an official publication of the Infectious Diseases Society of America Jan 15 2016;62(2):220-9. doi: 10.1093/cid/civ801 Epub 2015 Sep 11

[Modeling and Cost-Effectiveness in HIV Prevention](#)
Jacobsen, M. M. and Walensky, R. P. Current HIV/AIDS reports Jan 30 2016;(1). doi: 10.1007/s11904-016-0303-2

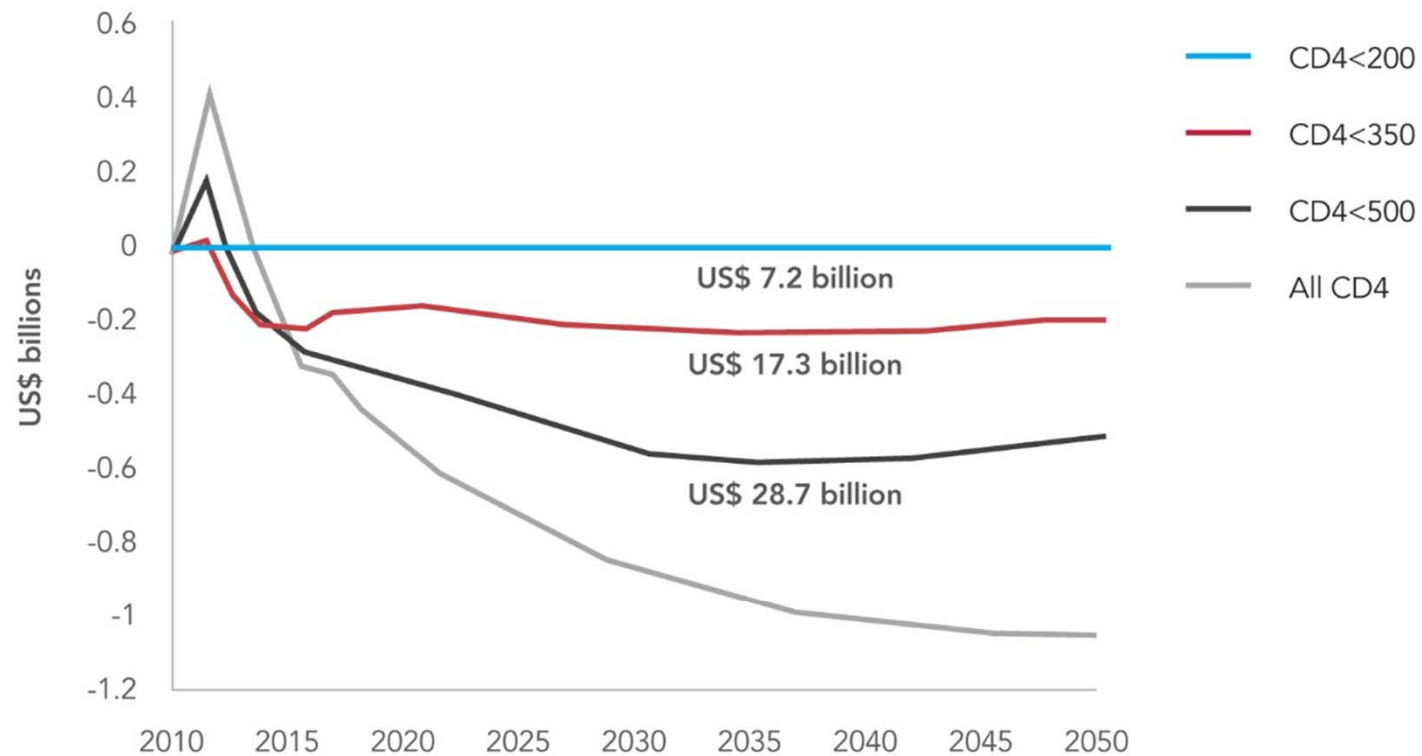
[Cost-Effectiveness of Frequent HIV Testing of High-Risk Populations in the United States](#)
Hutchinson, A. B. - Farnham, P. G. - Sansom, S. L. - Yajlali, E. and Mermin, J. H. Journal of acquired immune deficiency syndromes (1996) Mar 1 2016;71(3):323-30. doi: 10.1097/QAI.0000000000000938

HIV in Europe

1. **Politics**
2. Name and Shame
3. Local Activism (initiatives)
4. Increase testing

EUROPEAN
COMMISSION

EXPANDING ACCESS TO ANTIRETROVIRAL TREATMENT IS A SMART INVESTMENT: CASE OF SOUTH AFRICA



Source: Granich R et al. Expanding ART for treatment and prevention of HIV in South Africa: Estimated cost and cost-effectiveness 2011-2050. PLoS ONE , 2012, 7:e30216.

90-90-90 An ambitious treatment target to help end the AIDS epidemic



Testing; there is a way to go

Many tests but not in KAP: Screening and positivity rate in Belarus, 2012

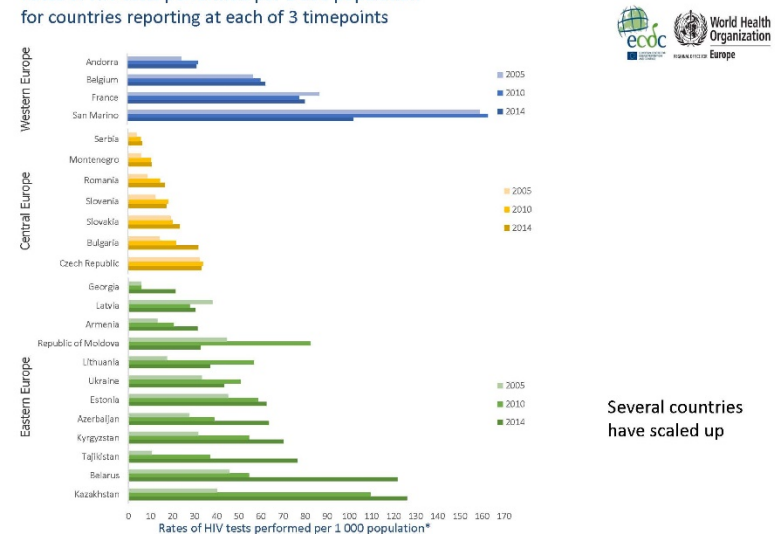
Category screened	No (%) screened	% HIV+
Drug users	4,466 (0,4%)	1,5
STI patients	21,347 (2.1%)	0,2
Blood donors	302,131 (30%)	0,007
Pregnant women	231,584 (23%)	0,05
Prisoners	27,583 (2,8%)	0,5
Clinical indication	74,203 (7,4%)	0,5
Other	369,651 (37%)	0,1
Total	1,003,382	0,12

MSM ?



WHO country mission report, 2014

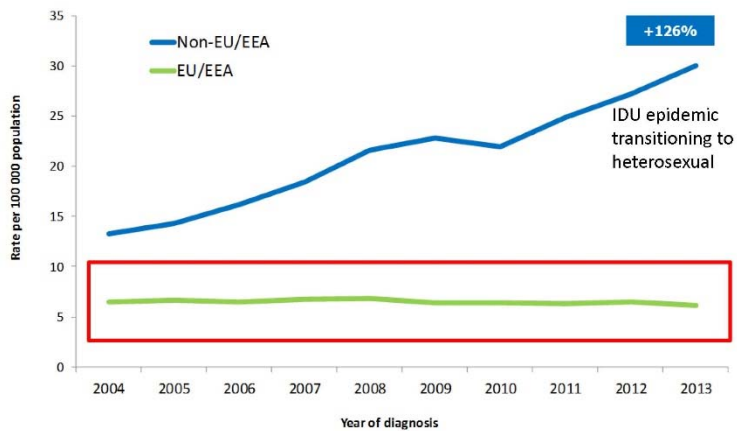
Rates of HIV tests performed per 1 000 population* for countries reporting at each of 3 timepoints



Several countries
have scaled up

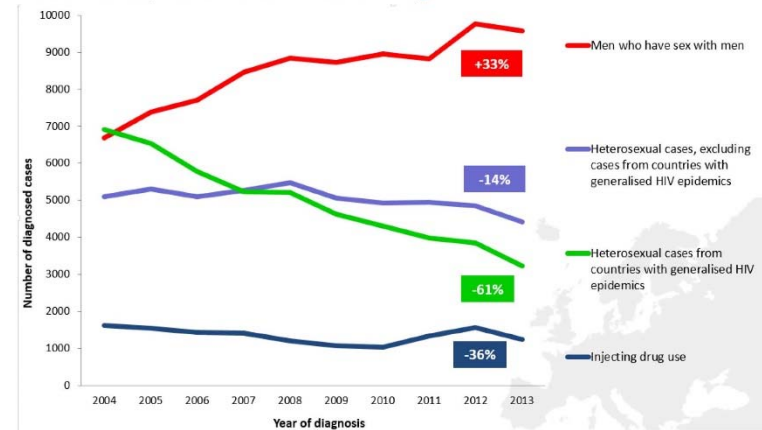
*excluding unlinked anonymous testing and testing of blood donations
Source: ECDC/WHO EURO. HIV/AIDS surveillance in Europe 2014. Stockholm: ECDC, 2015

Rate of newly reported HIV diagnoses EU/EEA and non-EU/EEA countries, 2004–2013



ECDC and WHO-Europe, 2015

HIV infections diagnosed, EU/EEA 2004–2013, transmission mode and origin



ECDC and WHO-Europe, 2015

↑ **Testing**

↑ Knowledge

↑ Targeted testing

↑ Social media

Results – HIV diagnoses per Indicator Condition

	HIV test	HIV +	Prevalence (95%CI)	
Total	3588	66	1.84	(1.42-2.34)
STI	764	31	4.06	(2.78-5.71)
Malignant lymphoma	344	1	0.29	(0.01-1.61)
Cervical or anal dysplasia	542	2	0.37	(0.04-1.32)
Herpes Zoster <65yo	207	6	2.89	(1.07-6.21)
Hepatitis B/C	1099	4	0.36	(0.10-0.93)
On-going mononucleosis-like illness	441	17	3.85	(2.26-6.10)
Leuko/thrombocytopaenia	94	3	3.19	(0.66-9.04)
Seborrheic dermatitis/exanthema	97	2	2.06	(0.25-7.24)

PERSONAL FAVOURITES

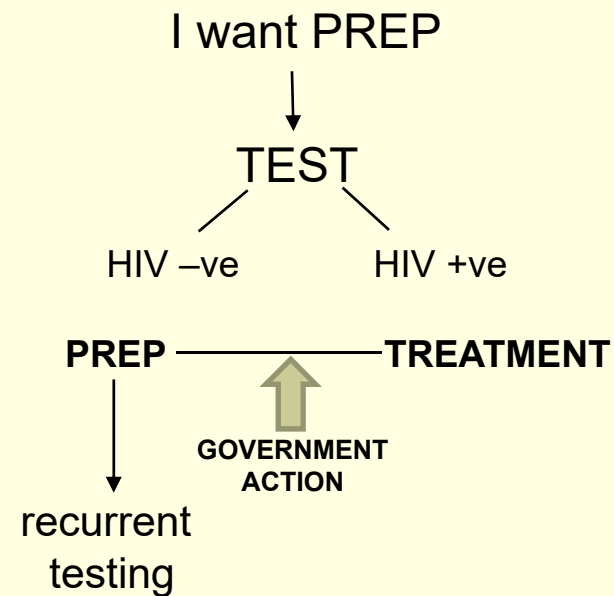
1. Infectious Mono.
2. Hep B
3. SOL in BRAIN
4. Lymphoma

PREP

Very effective

Improves P.H.

Encourages testing



Dean Street model

1. Test every few months
2. S/C late **halved** since PREP



Testing by

Negatives

Stigma Index – results and phase 2 "From Evidence to Action"

HIV-related Stigma:
A cross analysis of findings from the People Living with HIV Stigma Index in Estonia, Moldova, Poland, Turkey, and Ukraine

Late Testing, Late Treatment

Phase II: Development of advocacy and actions in the 5 phase 1-countries, Estonia, Moldova, Poland, Turkey and Ukraine

Embargoed until 25 May 2015, 10 am CEST

Yallahs, 14 May 2015

The HIV in Europe coalition urges governments, policymakers to address HIV-related stigma and discrimination, and calls for the implementation of comprehensive HIV testing strategies to address the problem of "late presentation" in European Union member states and neighbouring countries.

The study "HIV-related Stigma: Late Testing, Late Treatment" launched today at the European conference "HIV in Europe in Practice: From Access to Care to Quality" provides an in-depth analysis of stigma and its impact on the HIV testing and treatment process. The study focuses on people living with HIV in five countries: Estonia, Moldova, Poland, Turkey and Ukraine.

The research was conducted with partners working HIV testing, after people have been invited to get an HIV test, and they generally prefer action to the policy on their behaviour concerning an HIV test. The study also found that people who are not ready to get an HIV test, are often not ready to get an HIV test, and that disclosure about HIV-related stigma and its impact on the health care process.

Among the anticipated reactions to an HIV-positive test are fears of losing one's job and/or other negative reactions such as being ostracised by family or friends. The study also revealed that respondents are not ready to deal with the HIV infection, and that disclosure about HIV-related stigma and its impact on the health care process.

The study used information about the current health of the respondents, and the circumstances under which they tested for HIV to illustrate the following research questions:

- Did respondents who waited longer to test or to receive care report overall worse health than those who tested or received care earlier?
- Did respondents who tested anonymously report better quality of medical care?
- Did respondents who received pre and post test counselling report better quality of medical care?

The answer to each of these questions, with a few qualifications, was yes in all five countries in the study.

Based on the opportunity challenges of "late presentation", the BCCDC Dutch Knowledge Programme Project (DUP) states that "the reduction of HIV-related stigma is a key priority" in Europe and elsewhere.

The situation requires a social and a medical response with the goal of stigmatisation and discrimination based on HIV status needs to be addressed and good HIV testing practices need to be implemented.

For more information, please contact: Dr. Anja Koenen, HIV in Europe, anja.koenen@hivineurope.org, www.hivineurope.org

HIV in Europe Testing and Counselling project

All materials from the project are available on the website.

HIV Testing and Counselling in Europe

Project Status: Current
People Involved: John de Wit, Stephen Bell
Research Areas: HIV & Sexual Health Risk & Risk Reduction
Funding Agency: HIV in Europe

HIV in Europe Working Together for Optimal Testing and Earlier Care

To identify political, structural, clinical and social barriers to achieving optimal testing and care

HIV testing and counselling is a critical gateway to further services, and is essential for effective HIV prevention and treatment (WHO, 2012 [PDF]). In many European countries, HIV testing efforts are failing to identify HIV infections early enough, and substantial proportions of people with HIV are unaware of their infection (Coenen et al. 2008¹⁷; Hamers et al. 2008¹⁷). National, European and Global guidelines offer recommendations about the different ways of obtaining informed consent, undertaking pre-test discussion and post test counselling, delivering test results and making referrals to specialist services after testing. While guidance is diverse, there are sometimes disparate recommendations and information gaps, and it is uncertain to what extent these are informed by evidence or expert opinion.

In response, CSRH has been commissioned by HIV in Europe to review testing and counselling guidelines across European country contexts. This project will contribute to the evidence base that guides the development and implementation of HIV testing models, which are acceptable to providers and clients, feasible in diverse practice settings and effective in promoting risk reduction.

Ongoing research consists of a review of guidance documents to examine HIV testing and counselling recommendations, complemented by a series of evidence synthesis to inform and update evidence synthesis. A summary table below:

HIV Testing Services: Analysis of guidelines and perceptions of practice across the WHO European Region
Summary Report

UNSW
HIV in Europe
Centre for Social Research in Health

March 2015

This work was undertaken by the Centre for Social Research in Health, UNSW Australia, funded by the HIV in Europe Initiative, and supported by the HIV in Europe Steering Committee.

CSRH



Co-funded by the 2nd Health Programme of the European Union

OptTEST on social media

Twitter (@OptTESTbyHIE)

- 89 followers
- 190 Tweets
- The last 28 days (from 10 May and back) the OptTEST Twitter account had 394 impressions.

Facebook

- 54 'likes'
- From 13 April to 12 May the post that reached most people were on 19 April with 151 people reached.

Help us improve visibility!
Follow and 'like' and let us know if there is information we can share on social media!

Optimising testing of for HIV across Europe



OptTEST

Twitter

Facebook

LinkedIn

YouTube

Instagram

Nextdoor

WhatsApp

Telegram

Signal

Skype

Zoom

Microsoft Teams

Slack

Jitsi

GoToMeeting

Webex

Blackboard

Moodle

Canvas LMS

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn

FutureLearn



Indicator Conditions Guidance document

Table of indicator conditions and HIV testing recommendations have been updated according to the findings in HIDES 2

2a. Conditions associated with an undiagnosed HIV prevalence of ≥ 0.1

- Strongly recommended testing:**
- Sexually transmitted infections
 - Malignant lymphoma
 - Anal cancer/dysplasia
 - Cervical dysplasia
 - Herpes zoster
 - Hepatitis B or C (acute or chronic)
 - Mononucleosis-like illness
 - Unexplained leukocytopenia/thrombocytopenia lasting >4 weeks
 - Seborrheic dermatitis/exanthema
 - Invasive pneumococcal disease
 - Unexplained fever
 - Candidaemia
 - Visceral leishmaniasis
 - Pregnancy (implications for the unborn child)

2b. Other conditions considered likely to have an undiagnosed HIV prevalence of $>0.1\%$

- Other findings:**
- Primary lung cancer
 - Lymphocytic meningitis
 - Oral hairy leukoplakia
 - Severe or atypical psoriasis
 - Guillain-Barré syndrome
 - Mononucleitis
 - Subcortical dementia
 - Multiplesclerosis-like disease
 - Peripheral neuropathy
 - Unexplained weightloss
 - Unexplained lymphadenopathy
 - Unexplained oral candidiasis
 - Chronic diarrhoea
 - Chronic renal impairment
 - Hepatitis A
 - Community-acquired pneumonia

