Public Health & HIV - can we end the AIDS epidemic by 2030?

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The UNAIDS 90:90:90 vision is to eliminate the AIDS epidemic by 2030.

This calls for, by 2020:
- 90% of people living with HIV to be diagnosed
- 90% of those diagnosed to receive treatment
- 90% of those treated to be virally suppressed

You have to look to the past, to learn for the future.
Ignorance, Fear & Prejudice

First Report of AIDS

Twenty years ago, on June 5, 1981, MMWR published a report of five cases of Pneumocystis carinii pneumonia (PCP) among previously healthy young men in Los Angeles (1). All of the men were described as "homosexuals"; two had died. Local clinicians and the Epidemic Intelligence Service (EIS) Officer stationed at the Los Angeles County Department of Public Health, prepared the report and submitted it for MMWR publication in early May 1981. Before publication, MMWR editorial staff sent the submission to CDC experts in nosology and sexually transmitted diseases. The editorial note that accompanied the report suggested a "cauliflower-like" disease acquired through "gay" sex.

The New York Times (June 6, 1981) reported on the MMWR report of the cases of AIDS. The Star-Ledger (June 7, 1981) in Newark, New Jersey, carried the first full story on what the New York Times called a "mysterious malady." According to published reports, the first patients were men who had unprotected anal intercourse with men and had lung infections caused by a fungus.
Community response & Activism

- Terrence Higgins Trust: 1984
- ACT UP: 1987
- NAT (National AIDS Trust): 1987

Diagram illustrating the cycle of SILENCE, HIV/AIDS, IGNORANCE, DISCRIMINATION, STIGMA, and FEAR.
Age of Optimism? 1987-2007

Annual new HIV and AIDS diagnoses and deaths: UK, 1981-2013

New HIV diagnoses
AIDS
Deaths

HIV in the United Kingdom: 2014
Annual new HIV and AIDS diagnoses and deaths: UK, 1981-2013

Elimination a possibility?

Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: a mathematical model

Reuben M Granich, MD  Prof Charles F Gilks, DPhil  Prof Christopher Dye, DPhil  Prof Kevin M De Cock, MD  Brian G Williams, PhD

Published: November 26, 2008  DOI: https://doi.org/10.1016/S0140-6736(08)61597-9
New HIV & AIDS diagnoses and deaths 1981-2017

101,600 individuals living with HIV

8% Unaware Diagnosis 7,800

4,363 new cases 2017
Elimination strategy - Combination HIV prevention

• Testing
• Treatment as prevention
• Primary Prevention
Late diagnosis should be a ‘never event’

Proportion of people diagnosed with HIV at a late stage of infection by exposure category: United Kingdom, 2007 - 2017

One year mortality rate amongst newly diagnosed adults by CD4 2016

43%
1066
HIV testing

BHIVA /BASHH HIV Testing Guidelines 2008

2011
• Time to Test report
• HIV Testing Week
• NICE HIV guidance

• 2012 Health & Social Care Act

Diagnosed HIV prevalence 2017 per 1000 population age 15-59
Services in areas of **high HIV prevalence** (between 2 and 5 cases of diagnosed HIV per 1,000 people aged 15 to 59) should:

- Offer HIV testing to everyone who registers with the practice and has not been diagnosed with HIV
- Offer HIV testing to everyone who attends a specialist sexual health clinic
- Offer HIV testing on admission to hospital to everyone who has not previously been diagnosed with HIV and who is undergoing blood tests for another reason

Services in areas of **extremely high prevalence** (5 or more cases of diagnosed HIV per 1,000 people aged 15 to 59 years) should also:

- Offer testing to everyone admitted to hospital, including emergency departments, who has not previously been diagnosed with HIV
- Consider HIV testing opportunistically in general practice

**Ref:** NICE HIV guideline developed with PHE – December 2016
Treatment guidelines based starting HIV treatment on CD4 threshold:

- 1998: CD4 < 200
- 2000: CD4 < 350
- 2002: CD4 < 200
- 2005: CD4 < 350
- 2009: CD4 < 500
- 2015: Any CD4

Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection
The INSIGHT START Study Group

BHIVA Guidelines
Impact of Anti-retroviral therapy

Sources: Samji H et al., PLoS ONE, 2013
Trickey A et al., Lancet HIV 2017

Life expectancy of 20 year old living with HIV in high income country
Pregnancy & Breastfeeding

Antenatal screening for HIV 2003
Transmission rate
• No intervention 15-45% v Intervention 0.3%  ACTG 076 trial

• Positivity rate Antenatal screening 0.013% (99% uptake)
• 71 new diagnosis 2016/17

4 HIV +ve babies in 2017 – all mothers diagnosed post 20 weeks pregnancy

At present breastfeeding is under debate

WWW.hivprevention.uk
Treatment as prevention

The PARTNER study (2016)

1,000 mixed status couples

- All HIV+ partners virally suppressed and on effective treatment

- 58,000 sex acts without a condom

0 transmissions of HIV

Viral suppression from ART prevents HIV transmission

AVERT.org  Source: The PARTNER study (2016)

UNDETECTABLE = UNTRANSMITTABLE

JAMA. 2016;316(2):171-181
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In the UK:
- 92% of those living with HIV are diagnosed
- 98% of those diagnosed receiving antiretroviral treatment
- 96% of those treated virally suppressed

Ref: www.unaids.org
Primary prevention

Sexually transmitted infections in England
New diagnoses 2017

Source: Public Health England
Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): effectiveness results from the pilot phase of a pragmatic open-label randomised trial

Prof Sheena McCormack, MSc  Prof David T Dunn, PhD  Monica Desai, MPH  David I Dolling, MSc
Mitzy Gafos, PhD  Richard Gibson, MD  et al.

Open Access  Published: September 09, 2015  DOI: https://doi.org/10.1016/S0140-6736(15)00556-2

Announcement extra 10,000 spaces on trial Jan 2019
Impact of PrEP?

HIV in the United Kingdom: decline in new HIV diagnoses in gay and bisexual men in London, 2017 report

In 2016, 5,164 people were newly diagnosed with HIV in the United Kingdom (UK) (3,938 men and 1,226 women), representing an 18% decline from the 6,286 diagnoses reported in 2015. The decrease was most apparent in gay and bisexual men. In this group, the number of HIV diagnoses reported steadily increased from 2,850 in 2007 to 3,570 in 2015, and then decreased by 21% to 2,810 in 2016 (figure 1) [1].
### Uptake of HIV PrEP in sexual health services: Scotland, July 2017–June 2018

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals with PrEP prescriptions</td>
<td>1,872</td>
</tr>
<tr>
<td>MSM</td>
<td>1,846</td>
</tr>
<tr>
<td>Females</td>
<td>14</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>12</td>
</tr>
<tr>
<td>Individuals coded as PrEP ineligible</td>
<td>274</td>
</tr>
</tbody>
</table>

#### Roll out of HIV PrEP in sexual health services

- **Total PrEP prescriptions**: 4,432
- **New individuals prescribed PrEP**: 1,872

#### Age of PrEP recipients

- <20: 70
- 20–24: 327
- 25–29: 412
- 30–39: 304
- 35–39: 229
- 40–44: 153
- 45–49: 130
- 50+: 247

#### Service impact of PrEP

- **531 (28%)** were attending for the first time in 2 years
- **356 (19%)** had no prior recorded attendance on NaSH, i.e. may never have attended clinic before

#### Additional Information

- **32% inc HIV testing**
- **2 new cases in patients prescribed PrEP**

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NaSH has been in use for up to 10 years in mainland NHS board clinics.
Political will

• Ending AIDS as a public health threat by 2030 is feasible if high HIV burden cities around the world fast-track their AIDS responses. Since its World AIDS Day 2014 launch, Mayors and other municipal leaders have joined forces with civil society representatives to action the Paris Declaration on Fast-Track Cities. Four core partners – the City of Paris, IAPAC, UNAIDS, and UN-Habitat – are working with Fast-Track Cities in every region of the world to attain this global initiative’s 90-90-90 and zero stigma and discrimination targets by 2020.
Be prepared

Glasgow

>130 new HIV cases in PWID ‘15-19
Co-infected Hep C
Male 61% / av age 38
Social Exclusion
An intergenerational comparison of stigma and discrimination in non-HIV healthcare settings across the UK

*The Young People Living with HIV Stigma Survey UK 2017*
Will we achieve our goal?

• Buy in by Health care professionals
  • Treatment as Prevention

• Political will

• Eradication of Stigma

It Starts with You
Diolch

Acknowledgements

Avert
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Stigma Index UK
PHE &PHW
UN AIDS
WHO

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