"JACK OF ALL TRADES, MASTER OF NONE..." IS THE HALF OF THE QUOTE EVERYONE KNOWS

"THOUGH OFTEN TIMES BETTER THAN A MASTER OF ONE"
Evolution NOT revolution
REVOLUTION

NOT EVOLUTION
CONTRACTING HIV IS A DEATH SENTENCE.
UNDIAIGNOSED HIV CAN BE A DEATH SENTENCE

...DIAGNOSED HIV DOESN'T HAVE TO BE
People diagnosed early with HIV can expect to have a near-normal life expectancy

Walk in for 40 second HIV results anytime during our opening hours
Monday - Friday, 8am - 8pm
100 Tower St, New York, NY 10001

Or visit www.healthquest.org to be sent a home testing kit
The testing service is free of charge and provided by the NYC Health + Hospitals Community.
Estimated adult and child deaths from AIDS
(2014)

Total: 1.2 million [980,000 – 1.6 million]
Estimated number of adults and children newly infected with HIV (2014)

- **North America and Western & Central Europe**: 85,000 (48,000 – 130,000)
- **Eastern Europe & Central Asia**: 140,000 (110,000 – 160,000)
- **Caribbean**: 13,000 (9,600 – 17,000)
- **Latin America**: 87,000 (70,000 – 10,000)
- **Middle East & North Africa**: 22,000 (13,000 – 33,000)
- **Sub-Saharan Africa**: 1.4 million (1.2 million – 1.5 million)
- **Asia & Pacific**: 340,000 (240,000 – 480,000)

**Total: 2.0 million [1.9 million – 2.2 million]**

HIV prevention

Male circumcision

Treatment of STIs

Female condoms

Male condoms

Microbicides for women

Oral pre-exposure prophylaxis

MSM, couples, heterosexuals, IDUs

Treatment for prevention

HIV counselling and testing

Post Exposure prophylaxis (PEP)

Note: PMTCT, screening transfusions, harm reduction, universal precautions, etc have not been included. This is focused on reducing sexual transmission.

Note: PMTCT, screening transfusions, harm reduction, universal precautions, etc have not been included. This is focused on reducing sexual transmission.

HIV care cascade – WHO target

The treatment target

- Diagnosed: 90%
- On treatment: 90%
- Virally suppressed: 90%
Global results: HIV treatment cascade

- 90% of people living with HIV who know their HIV status
- 81% of people living with HIV who are on ART
- 73% of people living with HIV who are virally suppressed
UNAIDS 90-90-90 treatment targets

HIV treatment targets for 2020 with global 2013 estimates

Global HIV treatment cascades from 12 countries/regions:
Switzerland, Australia, UK, Denmark, Netherlands, France, Brazil, Canada (BC), USA, Sub-Saharan Africa, Georgia, Estonia, Russia

UNAIDS 90-90-90 target of 73% viral suppression
Of the 1.1 million Americans living with HIV, only 25 percent are virally suppressed.

- 1,100,000 are living with HIV.
- 902,000 have been diagnosed.
- 726,000 are linked to care.
- 407,000 are retained in care.
- 363,000 are on ART.
- 275,000 are virally suppressed (VL <50 c/mL).

Percentages:
- 82% diagnosed
- 80% linked to care
- 56% retained in care
- 89% on ART
- 76% virally suppressed
- 25% virally suppressed

CDC Fact Sheet, HIV in the United States: The Stages of Care, July 2012
Lagging behind is not fatal, remaining there is.
HIV care cascade – UK

The treatment target

- Diagnosed: 87%
- On treatment: 96%
- Virally suppressed: 94%

KNOW YOUR HIV STATUS
Barriers to HIV Testing

Clinician
- Time
- Confidence
- Knowledge
- Fear of stigmatising
- Concerns around “counselling”

Patient
- Stigma
- Lack of knowledge
- Fear of disclosure
- Lack of perceived risk
- Access to health-care
- Fear of positive result
Solutions......

- Empower people to self-manage their HIV test
- Build capacity by taking HIV testing out of the clinic
- Develop systems that encourage not just uptake of testing but regular testing
- Ensure this process is integrated with ‘traditional’ services not isolated from them
WE'RE NOT IN 1984 ANYMORE, TO TO O.

LEARN THE FACTS... HIV ISN'T WHAT IT USED TO BE.

THE STIGMA PROJECT
I AM A BISHOP. I GOT TESTED FOR HIV.

YOUR HIV STATUS IS A MEDICAL DIAGNOSIS, NOT A MORAL JUDGMENT.

The Most Reverend Ephraim S. Fajutagana
Obispo Maximo XII
Iglesia Filipina Independiente
HIV Stigma Scars
Heal the Pain. End the Shame.
Hot pick – Women

Worry, avoidance and discrimination in the last 12 months

http://www.stigmaindexuk.org
HIV disclosure and stigma

Experiences in the dental setting compared to other clinical settings

- Staff not aware of HIV status
- Worried about being treated differently
- Reported being treated differently
- Felt refused or delayed treatment
- Avoided seeking care

Dental practice | GP practice | GUM clinic
---|---|---
46% | 14% | 9%
40% | 27% | 5%
15% | 13% | 3%
5% | 5% | 2%
14% | 14% | 3%

http://www.stigmaindexuk.org
HIV testing technologies

Point of care testing

- Alere determine 4th generation
- INSTI 3rd generation
- Orasure 3rd generation

Laboratory testing (postal)

- The Doctors Laboratory – ‘Tines’
- Dried blood spot testing
Home HIV tests

BioSure

OraQuick®
Relationship to marketing

National HIV testing
week

MARKETING
Promoted by HIV prevention campaigns and through social media
## Home sampling experience (THT and Dean Street)

<table>
<thead>
<tr>
<th>Service</th>
<th>Activity</th>
<th>Returns (%)</th>
<th>Positivity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Terrence Higgins Trust</a></td>
<td>Jan – Sep 2013</td>
<td>17,701 requests</td>
<td>11,488 (64.9%)</td>
</tr>
<tr>
<td></td>
<td>Nov 2013 – March 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nov 2011 - Aug 2013</td>
<td>4,838 requests</td>
<td>2,901 (59.9%)</td>
</tr>
</tbody>
</table>
Self-reported HIV testing history

- **MSM**:
  - 25% Never tested
  - 33% Over a year ago
  - 41% Within the last year
  - Total: n=3270

- **Black African Heterosexuals**:
  - 13% Never tested
  - 47% Over a year ago
  - 40% Within the last year
  - Total: n=112
A universal testing programme for blood borne viruses in an urban ED

**A call for more widespread ED testing in Ireland**

**Methods:**
- **Opt out BBV** (HIV Ab, Hep BsAg, HCV Ab) screening as routine care
- Targets for uptake set for each month
- 5,299 patients were screened over 20 weeks and analysed

**Results:**
- Target of 50% was achieved

**Number of diagnoses**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>New diagnosis</th>
<th>Previously known</th>
<th>Prevalence rate of new diagnoses (per 1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>63</td>
<td>6</td>
<td>57</td>
<td>1.13</td>
</tr>
<tr>
<td>HBV</td>
<td>25</td>
<td>12</td>
<td>13</td>
<td>2.25</td>
</tr>
<tr>
<td>HCV</td>
<td>287</td>
<td>44</td>
<td>243</td>
<td>8.3</td>
</tr>
</tbody>
</table>
### Linkage to care subsequent to diagnosis
(new and previously known patients)

<table>
<thead>
<tr>
<th></th>
<th>Known</th>
<th>New</th>
<th>Now linked</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>57</td>
<td>6</td>
<td>62 (98.4%)</td>
</tr>
<tr>
<td>HBV</td>
<td>13</td>
<td>12</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>HCV</td>
<td>243</td>
<td>44</td>
<td>227 (79%)</td>
</tr>
</tbody>
</table>
## Prevalence of HIV by indicator condition

<table>
<thead>
<tr>
<th>Indicator condition</th>
<th>Individuals having HIV test (number)</th>
<th>HIV positive (number)</th>
<th>Prevalence (95% CI)</th>
<th>Number of surveys</th>
<th>Local HIV prevalence*</th>
<th>Country HIV prevalence***</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>3588</td>
<td>66</td>
<td>1.84 (1.42–2.34)</td>
<td>39</td>
<td>0.1–1.1</td>
<td></td>
</tr>
<tr>
<td><strong>Indicator condition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually transmitted infection (STI)</td>
<td>764</td>
<td>31</td>
<td>4.06 (2.78–5.71)</td>
<td>4</td>
<td>0.8–3.0</td>
<td>0.2–0.3</td>
</tr>
<tr>
<td>Malignant lymphoma (LYM)</td>
<td>344</td>
<td>1</td>
<td>0.29 (0.006–1.61)</td>
<td>5</td>
<td>0.8</td>
<td>0.1–0.2</td>
</tr>
<tr>
<td>Cervical or anal dysplasia or cancer (CAN)</td>
<td>542</td>
<td>2</td>
<td>0.37 (0.04–1.32)</td>
<td>4</td>
<td>0.8</td>
<td>0.1–0.2</td>
</tr>
<tr>
<td>Herpes zoster (HZV)</td>
<td>207</td>
<td>6</td>
<td>2.89 (1.07–6.21)</td>
<td>5</td>
<td>0.3–0.9</td>
<td>0.1–0.4</td>
</tr>
<tr>
<td>Hepatitis B or C (HEP)</td>
<td>1099</td>
<td>4</td>
<td>0.36 (0.10–0.93)</td>
<td>6</td>
<td>0.2–2.8**</td>
<td>0.1–1.1</td>
</tr>
<tr>
<td>Ongoing mononucleosis-like illness (MON)</td>
<td>441</td>
<td>17</td>
<td>3.85 (2.26–6.10)</td>
<td>7</td>
<td>0.2–0.9</td>
<td>0.3–1.1</td>
</tr>
<tr>
<td>Unexplained leukocytopenia / thrombocytopenia (CYT)</td>
<td>94</td>
<td>3</td>
<td>3.19 (0.66–9.04)</td>
<td>4</td>
<td>0.3–0.8</td>
<td>0.1–0.4</td>
</tr>
<tr>
<td>Seborrheic dermatitis / exanthema (SEB)</td>
<td>97</td>
<td>2</td>
<td>2.06 (0.25–7.24)</td>
<td>4</td>
<td>0.3–0.8</td>
<td>0.2–0.4</td>
</tr>
</tbody>
</table>

*Unpublished prevalence data from participating study sites; **Includes MSM, IDU prevalence; ***UNAIDS adults aged 15–49 country HIV prevalence rate
During the year preceding the diagnosis, 46.6% of the patients had sought medical advice owing to the presence of clinical indicators that should have led to HIV testing.¹

Only 9% of patients eligible for screening were screened in a ED serving a population with a seroprevalence of 2%.²

Sixty-one percent reported not undergoing HIV testing after their last STI diagnosis.³
New HIV diagnoses among adults attending sexual health services

- Gay/bisexual men
- Heterosexual men
- Heterosexual women

Current HIV trends in England
New HIV diagnoses among gay men in England

Note: There has been a year on year increase in the median CD4 cell count at diagnosis over this period indicating earlier diagnosis.
Investigation into reports of a drop in new diagnoses: Background & Context

- HIV incidence rates in gay and bisexual men and other men who have sex with men living in the UK are estimated at 5-10/1,000 overall and 30+/1,000 among STI attendees with a bacterial infection
- The UK has open access, high quality and free and STI & HIV testing and care
- Testing guidelines and new testing modalities (eg home sampling)
- Long history of health promotion programmes with relatively high uptake of condoms
- PROUD trial began in late 2015, internet Prep since mid 2016
Information on new diagnoses and testing among all gay men attending sexual health clinics (GUMCAD)

Clinic Strata

• Clinic with a ‘significant’ or steep fall: Clinics with >20% decrease in HIV diagnoses between Oct 2014-Sep 2015 and Oct 2015-Sep 2016, and over 40 diagnoses during this period.

➢ Dean St, Mortimer Market, Homerton, St Mary, Guy and St Thomas

• Other London clinics and clinic in other parts of England

Testing data on men attending for HIV test at the same clinic in the last 2 years (repeat testers) and those who had a new test in last 2 years
Disease is disguised
Don't gamble with VD!

Will my parents find out I went to the STD clinic?
56 Dean Street diagnoses over 1 in 3 of London’s bacterial STI’s in MSM

<table>
<thead>
<tr>
<th>Condition</th>
<th>England</th>
<th>London</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>17%</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>(1477/8509)</td>
<td>(1477/3989)</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>21%</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>(2276/10754)</td>
<td>(2276/6104)</td>
</tr>
<tr>
<td>Syphilis</td>
<td>22%</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>(464/2142)</td>
<td>(464/1133)</td>
</tr>
<tr>
<td>Herpes</td>
<td>24%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>(333/1360)</td>
<td>(333/619)</td>
</tr>
<tr>
<td>Warts</td>
<td>23%</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>(827/3492)</td>
<td>(827/1231)</td>
</tr>
</tbody>
</table>

(PHE 2012 data)
1 in 4 HIV diagnoses (MSM)

<table>
<thead>
<tr>
<th></th>
<th>Number of MSM diagnosed at 56DS (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>358</td>
<td></td>
</tr>
<tr>
<td>1307</td>
<td>Number of MSM diagnosed in London (2012)</td>
</tr>
</tbody>
</table>

(358/1307 = 27%)  

<table>
<thead>
<tr>
<th></th>
<th>Recent infection (RITA+)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UK</strong></td>
<td>14%</td>
</tr>
<tr>
<td><strong>56 Dean Street</strong></td>
<td>33%</td>
</tr>
</tbody>
</table>
Gay scene is highly sexualised
New Drug Trends

10 years ago

TODAY
Normalised Drug/Alcohol use on our Bar and Club Scene

“Abstinent” based models inappropriate for this client group. This is not about scoring on the street corner; online purchasing and “Hooking up”.
New HIV diagnoses among gay men attending sexual health clinics England

Steep fall definition: Clinics with >20% decrease in HIV diagnoses between Oct 2014-Sep 2015 and Oct 2015-Sep 2016, and over 40 diagnoses during this period.
HIV tests among gay men attending London Steep Fall clinics by frequency of HIV testing

Steep Fall: Clinics with >20% decrease in HIV diagnoses between Oct 2014-Sep 2015 and Oct 2015-Sep 2016, and over 40 diagnoses during this period.
Frequency of HIV testing among men attending SF clinics (n=5)

- 2012 (n=25,750)
- 2013 (n=26,922)
- 2014 (n=33,208)
- 2015 (n=37,645)
- 2016* (n=31,619)

**HIV test frequency**

- No tests in last 2 yrs
- 1 test in last 2 yrs
- 2-3 tests in last 2 yrs
- 4+ tests in last 2 yrs

![Bar chart showing the frequency of HIV testing among men attending SF clinics from 2012 to 2016.](chart.png)
HIV tests and new diagnoses among gay men attending London Steep Fall clinics (N=5)
HIV tests and new diagnoses among gay men attending other London clinics (N=30)
HIV tests and new diagnoses among gay men attending clinics in the rest of England (N=190)
Transmissible Viral Load

• Only persons that are undiagnosed or had a viral load >200 copies/mL at date last seen for HIV care can potentially transmit HIV

• Persons at high risk of HIV acquisition
  • HIV negative men with a documented STI in previous year was defined as High risk

Transmissibility Ratio: Total men with transmissible VL/ Total number of high risk men
Median days from HIV diagnosis to ART initiation among gay men in England
‘Standard’ pathway

New HIV+ 14 days 1st Dr

14 days
‘Standard’ pathway

U&E Hep A/B/C CD4
LFT  Syphilis
FBC  glucose

VL
HLA-B5701
VRT

RITA

Chelsea and Westminster Hospital
NHS Foundation Trust
‘Standard’ pathway

HA input
New pathway

48 h

U&E Hep A/B/C CD4
LFT
FBC
Syphilis
glucose
lipids
VL
HLA-B5701
VRT
RITA
Of 118 who attend 1st Dr appt, 89 (75%) started ART at 1st appt

*Of the 29 who did not start, 26 subsequently start ART
Outcomes

Started ART

55

VL<200 cpm

Yes

54

No*

1

Time to VL<200 (median, IQR) = 62 d (44 – 117 d)

*VRT L90M; started boosted-PI and Truvada
Baseline VL 183k to 70 then rebounded 1344 then DNA
Transmissibility: Estimated number of gay men with viral load > 200 copies/mL by clinic strata

*Estimated undiagnosed, diagnosed untreated and those treated with viral load >200 copies/mL
Transmissibility ratio by clinic, 2015

Steep fall clinics: 0.49 (3596)
Other London clinics: 1.66 (868)
Outside London clinics: 1.73 (2,933)

Transmissible VL: Estimated undiagnosed, diagnosed untreated or on ART with viral load >200 copies/mL
High risk men: HIV negative with a history of an STI in previous year
Improving linkage and retention in care

- **Health system** (e.g., integration and comprehensive HIV care)

- **Patient convenience and accessibility**

- **Peer support and counselling**

- **Reward**
HIV is an Easy-to-treat Virus
Antiretrovirals available in 2017

<table>
<thead>
<tr>
<th>NRTIs</th>
<th>NNRTIs</th>
<th>PIs</th>
<th>Integrase Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abacavir</td>
<td>Delavirdine</td>
<td>Atazanavir</td>
<td>Raltegravir</td>
</tr>
<tr>
<td>Didanosine</td>
<td>Efavirenz</td>
<td>Darunavir</td>
<td>Dolutegravir</td>
</tr>
<tr>
<td>Emtricitabine</td>
<td>Etravirine</td>
<td>Fosamprenavir</td>
<td>Elvitegravir</td>
</tr>
<tr>
<td>Lamivudine</td>
<td>Nevirapine</td>
<td>Indinavir</td>
<td></td>
</tr>
<tr>
<td>Stavudine</td>
<td>Nevirapine XR</td>
<td>Lopinavir</td>
<td></td>
</tr>
<tr>
<td>Tenofovir</td>
<td>Rilpivirine</td>
<td>Nelfinavir</td>
<td></td>
</tr>
<tr>
<td>Zidovudine</td>
<td>TAF</td>
<td>Ritonavir</td>
<td></td>
</tr>
<tr>
<td>TAF</td>
<td></td>
<td>Saquinavir</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tipranavir</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fusion Inhibitors</th>
<th>Entry Inhibitors</th>
<th>PK Boosters</th>
<th>Single Pill Regimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfuvirtide</td>
<td>Maraviroc</td>
<td>Ritonavir</td>
<td>Atripla</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cobicistat</td>
<td>Eviplera</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stribild</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Triumeq</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Genvoya</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Odefsey</td>
</tr>
</tbody>
</table>

NRTI, nucleoside reverse transcriptase inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; PI, protease inhibitor; PK, pharmacokinetic

Adapted from http://www.aidsmeds.com/list.shtml
TRUST ME

I'M THE DOCTOR
What are we trying to achieve?
What are we trying to achieve?

- Undetectable viral load?
- Normal CD4 count?
- Reduced (nil) transmission?
- Quantity of life?
- Quality of life?
The aim is to keep your viral load under 50, what we call undetectable.
Drug Resistance
Options


NNRTI

NRTI

PI
BIC vs. DTG in Treatment-Naive: Virologic Outcomes

Week 24

- BIC + FTC/TAF: 97%, 3%
- DTG + FTC/TAF: 97%, 2%

Week 48

- BIC + FTC/TAF: 63%, 2%
- DTG + FTC/TAF: 63%, 1%

No resistance to study medications was detected in either arm.

Gilead’s Investigational Fixed-Dose Combination of Bictegravir, Emtricitabine and Tenofovir Alafenamide for the Treatment of HIV-1 Meets Primary Endpoint in Four Phase 3 Studies