Too many reviews, too much monitoring

Prof Brian Angus
Nuffield Department of Medicine
Oxford University
Too many views, not much evidence
Why do we monitor patients?

• Improve clinical outcomes
• Early detection of drug toxicity
• Early detection of viral resistance
BHIVA audit Poor outcome rates: corrected data

<table>
<thead>
<tr>
<th></th>
<th>Poor outcome rate</th>
<th>Poor outcomes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients in and out of care</td>
<td>12.1%</td>
<td>1364</td>
<td>11,292</td>
</tr>
<tr>
<td>Patients in care</td>
<td>7.1%</td>
<td>751</td>
<td>10,565</td>
</tr>
<tr>
<td>Patients in care and seen during 2011</td>
<td>6.4%</td>
<td>659</td>
<td>10,308</td>
</tr>
</tbody>
</table>
Table 2. Percentage of patients experiencing treatment failure at 3, 6 and 12 months after baseline.

<table>
<thead>
<tr>
<th>Treatment failure</th>
<th>Percentage failed</th>
<th>95% CI</th>
<th>N failed</th>
<th>N remaining under follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment failure: CD4 &lt; 200</td>
<td>3 months</td>
<td>0</td>
<td>ND</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>0.04</td>
<td>0–0.1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>0.4</td>
<td>0.1–0.7</td>
<td>8</td>
</tr>
<tr>
<td>Treatment failure: CD4 &lt; CD4 at initiation of cART</td>
<td>3 months</td>
<td>0</td>
<td>ND</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>0.1</td>
<td>0–0.2</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>0.5</td>
<td>0.2–0.8</td>
<td>2086</td>
</tr>
<tr>
<td>Treatment failure: confirmed HIV RNA &gt; 500</td>
<td>3 months</td>
<td>0.1</td>
<td>0–0.3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>1.5</td>
<td>1.0–2.0</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>4.6</td>
<td>3.7–5.5</td>
<td>99</td>
</tr>
<tr>
<td>Treatment failure: AIDS-defining illness</td>
<td>3 months</td>
<td>0.04</td>
<td>0–0.1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>0.1</td>
<td>0–0.3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>0.4</td>
<td>0.1–0.7</td>
<td>8</td>
</tr>
<tr>
<td>Treatment failure: Non-AIDS-defining illness</td>
<td>3 months</td>
<td>0.2</td>
<td>0–0.4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>0.4</td>
<td>0.1–0.7</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>0.7</td>
<td>0.4–1.0</td>
<td>15</td>
</tr>
<tr>
<td>Treatment failure: death</td>
<td>3 months</td>
<td>0</td>
<td>ND</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>0.05</td>
<td>0–0.1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>0.05</td>
<td>0–0.1</td>
<td>1</td>
</tr>
<tr>
<td>Any treatment failure (any of the above)</td>
<td>3 months</td>
<td>0.3</td>
<td>0.1–0.5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>2.2</td>
<td>1.6–2.8</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>6.0</td>
<td>5.0–7.0</td>
<td>131</td>
</tr>
</tbody>
</table>

cART, combination antiretroviral therapy; CI, confidence interval.

EUROSIDA Two thousand two hundred and forty patients from the EuroSIDA study who maintained a stable and fully suppressed cART regimen for 1 year
Fig. 2. Kaplan–Meier time to treatment failure after maintaining a stable treatment regimen for 12 months. The subgroup of 1765 patients was suppressed greater than 80% of the time they were on cART prior to baseline, excluding any breaks in treatment and the 4 months after starting a new regimen.
• Among 1538 patients, the rate of single CD4<200 was 3.45/100 patient-years, and of confirmed CD4<200 was 0.77/100 patient-years.

• There was no significant difference in time to confirmed CD4<200 between biannual and annual CD4 measurement (p=0.336).
The DART Trial

Evaluates two strategies for delivering ART, comparing:

• clinical monitoring only with routine laboratory + clinical monitoring

• structured treatment interruptions with continuous ART
Safety of antiretroviral drugs
No effect of Monitoring Strategy on laboratory or clinical side effects (clinical (CDM) vs laboratory LCM) arms)

- Serious Adverse Event, p=0.2
- ART-modifying AE, p=0.85
- Grade 4 AE, p=0.18
- Grade 3/4 AE, p=0.52

Professor Di Gibb, 13 Dec 2011
Survival:
3% additional mortality benefit of CD4 monitoring after 2 years on therapy; only cost-effective if CD4 costs <$3.8

Prof. Di Gibb, 13 Dec 2011
British HIV Association guidelines for the routine investigation and monitoring of adult HIV-1-infected individuals 2011

D Ashiru, C Atkinson, M Burton, C Booth, P Care, A Falcoy, A Gazzard, P Kelk, N Maciejewski, D Muir, G Murphy, C Oken, F Pest, G Ridsdale, C Sansom, A Sheer, F Smith, W Tong, A Uscianowski, M Valtin, J Walsh, M Williams and D Yellin on behalf of the BHIVA Guidelines Subcommittees

British HIV Association (BHIVA), BHIVA Secretariat, Mediscrit Ltd, London, UK

Table of Contents
1. Levels of evidence
2. Introduction
3. Available targets
4. Table summaries
4.1 Initial diagnosis
4.2 Assessment of ART-naïve individuals
4.3 ART initiation
4.4 Initial assessment following commencement of ART
4.5 Routine monitoring of ART
4.6 References
5. Newly diagnosed and transferring HIV-positive individuals
5.1 Initial HIV-1 diagnosis
5.2 Tests to determine whether acquisition of HIV infection is recent
5.3 Individuals transferring care from a different HIV healthcare setting
5.4 Communication with general practitioners and shared care
5.5 Recommendations
5.6 References
6. Patients in care
6.1 Initial HIV-1 diagnosis
6.2 Monitoring of ART-naïve patients
6.3 Pre-ART initiation assessment
6.4 Monitoring individuals established on ART
6.5 Assessment of adherence
6.6 Recommendations
6.7 References
7. Examination
7.1 Recommendations
8. Identifying the need for psychological support
8.1 References

1. Levels of evidence [1]
1.1 Reference

1.1 Reference

2. Introduction
In the mid-1980s, the clinical care of patients with HIV Infection changed fundamentally as a result of the development and introduction of effective antiretroviral therapy (ART). This led to dramatic reductions in the numbers of patients under care with advanced immunodeficiency. Over subsequent years care has continued to evolve for a number of reasons, including:

a. a switch in paradigm to manage HIV infection as a long-term, treatable condition;

b. a decline in the proportion of patients with untreated viral replication and/or viral drug resistance;

c. an increase in the number of available antiretroviral drugs and changes in the use of guidelines to support ART, including drug resistance, viral tropism and human leucocyte antigen (HLA) IMMPR testing and therapeutic drug monitoring;

d. an increased recognition of non-AIDS-defining HIV morbidities, including cardiovascular, metabolic, renal and bone diseases, and certain non-AIDS-defining malignancies;

e. a change in the epidemiology, with an increase in the proportion of women and Black African patients attending for care;

f. an increase in the number of older individuals with HIV infection and the broadened challenge of managing HIV infection in patients with a range of comorbidities;

2.1 Overview
2.2 Hepatitis viruses
2.3 Herpes viruses
2.4 Molluscum and mollusca
2.5 Cytomegalovirus (CMV)
2.6 References
3.1 Other microbiological screening
3.2 Tuberculosis screening
3.3 Toxoplasmosis screening
3.4 Tropical screening
3.5 Other screening
3.6 Sexual health screening including anal and cervical cytology
3.7 Other history taking, counseling and sexually transmitted infection (STI) screening
3.8 Cervical and anal cytology
3.9 Recommendations
3.10 References
3.11 Routine monitoring recommended for specific patient groups
3.12 Women
3.13 Older age
3.14 Injection drug users
3.15 Individuals coinfected with HBV and HCV
3.16 Late presenters
3.17 Recommendations
Appendix

Keywords: antiretroviral-experienced, antiretroviral-naïve, assessment, HIV positive, monitoring

Accepted 22 September 2011
Current BHIVA guidelines

4.2 Assessment of ART-naïve individuals

- 2–4 visits per year (3–6-monthly).
- Generally, fewer visits (2–3) are recommended for those with higher CD4 T-cell counts (> 450 cells/mL) than for individuals with CD4 T-cell counts approaching or below the treatment guidelines initiation threshold (350 cells/mL) [2].

**Investigations**
- FBC (yearly)
- Creatinine, eGFR, LFTs, glucose, lipid profile (yearly)
- Urinalysis (yearly)
- Urine protein/creatinine ratio (yearly)
- CD4 T-cell count (>450 cells/mL, 4–6-monthly; <450 cells/mL, 3–4-monthly)
- HIV-1 plasma viral load (6-monthly)
- Hepatitis B assessment (tests will depend on previous status; 12-monthly anti-HBs in vaccine responders, 12-monthly serology (HBsAg, anti-HBc and antiHBs) for susceptible patients including vaccine Nonresponders)
- HCV antibody if previously negative [regular screening is recommended for all patients; IDUs and MSM should be screened yearly]
- HCV RNA testing (12-monthly) in those who cleared a previous infection either spontaneously or after treatment and are at ongoing recognized risk of reinfection
- Serological tests for syphilis (STS) [MSM, at each routine visit (3–6-monthly); others, 12-monthly]
- Sexual health screen (offer 12-monthly, or more frequently if identified risks)
- Cervical cytology (12-monthly)

**Assessment**
- CVD risk (12-monthly)
- Fracture risk in patients aged 50 years [fracture risk assessment tool (FRAX) score] (3-yearly)
- BMD [eg. Dual Energy X-ray Absorptiometry (DXA)] in all men aged 70 years and all women aged 65 years.
4.4 Initial assessment following commencement of ART

- Patients should be assessed within 2–4 weeks of commencing ART. Time of assessment within this range will be influenced by factors including the regimen selected (see text).
- History
- Side effects
- Adherence

**Investigations**
- FBC
- Creatinine, eGFR, LFTs, glucose, bone profile
- CD4 T-cell count (4 weeks)
- HIV-1 plasma viral load (4 weeks)
4.5 Routine monitoring on ART

Individuals with good adherence and full virological suppression should be assessed 3–6-monthly.

More frequent assessment will be required if patients are not fully suppressed or other problems present.

**History**

- Symptom enquiry (physical, psychological)
- Sexual history (6-monthly)
- Other problems/interventions, including STIs
- Adherence
- Vaccination history
- Examination
- Weight, blood pressure, BMI (12-monthly)
- Targeted physical examination (guided by symptoms)

**Assessment**

- CVD risk (12-monthly)
- Fracture risk in patients aged 50 years (FRAX score) (3-yearly)
- BMD in all men aged 70 years and all women aged 65 years
- Consider BMD assessment in men and women 50 years old if intermediate-to-high FRAX score and/or additional risk factors
4.5 Routine monitoring on ART

**Investigations**
- FBC (12-monthly)
- Creatinine, eGFR, LFTs, glucose, bone profile (3–6-monthly)
- Lipid profile (6–12-monthly)
- Urinalysis at each routine visit if taking tenofovir (3–6-monthly); otherwise, 12-monthly
- Urine protein/creatinine ratio (12-monthly)
- CD4 T-cell count (3–6-monthly)
- HIV-1 plasma viral load (3–6-monthly)
- Cervical cytology (12-monthly)
- STS [MSM, at each routine visit (3–6-monthly); others, 12-monthly]

- Hepatitis B assessment [tests will depend on previous status; 12-monthly anti-HBs in vaccine responders]
- 12-monthly serology (HBsAg, anti-HBc and anti-HBs) for susceptible patients including vaccine nonresponders
- HCV antibody if previously negative (regular screening is recommended for all patients; IDUs and MSM should be screened yearly)
- HCV RNA testing (12-monthly) in those who cleared a previous infection either spontaneously or after treatment and are at ongoing recognized risk of reinfection
- Sexual health screen (offer 12-monthly, or more frequently if identified risks)
Updated questions

1. HIV + assessment/ history/ examination/diagnosis incl tests/ monitoring including patient views and communication/ service delivery of monitoring incl multidisciplinary teams/ screening tools

2. HIV + ART/ CD4 count /viral load/ resistance/ tropism + testing/monitoring/screening/ adherence

3. HIV + Liver/ Hepatitis (all)/ + testing/monitoring/screening FROM 2013 only

4. HIV + all other comorbs/OIs incl renal, PTH, Vitamin D, bones, fracture risk, lipids, diabetes, CVD, cancers, STIs, TB, tropical diseases + testing/monitoring/screening

5. HIV + mental health/ cognitive impairment/ neurocognitive/ psychological issues + testing/monitoring/screening

6. HIV+ other special populations incl pregnancy, conception/ contraception, menopause, intravenous drug users, late presenters, elderly, prisoners, immigrants +testing/monitoring/screening but see questions below.
“FREQUENCY OF CLINICAL EVALUATION” — The appropriate frequency of medical visits for an HIV-infected adult depends on many factors, including the stage of HIV infection, the use of antiretroviral therapy (ART), and the presence of other medical or social comorbidities and complications.

As an example, frequent visits may be appropriate for patients who are recently diagnosed or newly linked to care. Frequent visits are also warranted after the initiation of ART to evaluate efficacy and tolerability. However, once the viral load has been suppressed and the CD4 cell count is increased and stable, less frequent monitoring is appropriate.

VISIT FREQUENCY — Patients who are started on ART should generally have follow-up within one to two weeks to ask patients about their understanding of the regimen, adverse effects, adherence, and prevention of transmission. Once patients are clinically stable on their ART regimen, visit frequency can decrease to every three months.”
# Virologic response to treatment

<table>
<thead>
<tr>
<th>Time</th>
<th>Expectation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 week</td>
<td>VL decrease by 0.75 to 1 log10 copies/mL</td>
<td>Poulis, 2001</td>
</tr>
<tr>
<td>4 weeks</td>
<td>VL decrease by 1.5 to 2 log10 copies/mL to &lt;5000 copies/mL</td>
<td>Ghani, 2002</td>
</tr>
<tr>
<td>8-16 weeks</td>
<td>&lt;500 copies/mL</td>
<td>Maggiolo, 2000</td>
</tr>
<tr>
<td>16-24 weeks</td>
<td>&lt;50 copies/mL</td>
<td>Yeni, 2002</td>
</tr>
</tbody>
</table>

VL: viral load.
Approach to bone problems in patients with human immunodeficiency virus (HIV) infection

Initial approach

HIV infected individual

Assess risk factors:
- Age
- Sex
- Weight/height
- Hx of fractures
- Secondary causes

Lifestyle advice:
- Smoking cessation
- Vitamin D and calcium intake
- Weight-bearing exercise
- Sun exposure

Indications for DXA

- <50 years (male) PREmenopausal (female) AND NO hX of fracture?
  - WAIT
- ≥50 years (male) POSTmenopausal (female) AND/OR hX of fracture?
  - Measure BMD by DXA

Workup

T-score ≤ -2.5 OR fragility fracture
- Evaluate potential secondary causes identified in history
  - Secondary cause No
  - Secondary cause Yes

T-score > -2.5 and ≤ 1 NO fragility fracture
- Calculate FRAX score
  - 10 year fracture risk (USA)
    - ≥20 percent major osteoporotic AND/OR ≥3 percent hip
      - No
      - Yes

T-score > -1 NO fragility fracture
- Lifestyle advice
  - Continue ART
  - Consider biphosphonate or other treatment

Treatment

- Treat secondary cause
- Lifestyle advice
  - Continue ART

Follow up

- Monitor DXA in 1-2 years
- Monitor DXA in 2-3 years

Hx: history; BMD: bone mineral density; DXA: dual-energy x-ray absorptiometry; FRAX: Fracture Risk Assessment Tool; ART: antiretroviral therapy.


Huldrych F. Günthard, MD; Judith A. Aberg, MD; Joseph J. Eron, MD; Jennifer F. Hoy, MBBS, FRACP; Amalio Telenti, MD, PhD; Constance A. Benson, MD; David M. Burger, PharmD, PhD; Pedro Cahn, MD, PhD; Joel E. Gallant, MD, MPH; Marshall J. Glesby, MD, PhD; Peter Reiss, MD, PhD; Michael S. Saag, MD; David L. Thomas, MD, MPH; Donna M. Jacobsen, BS; Paul A. Volberding, MD
Recommendations for Monitoring Upon Initiation of or Change in ART

HIV-1 RNA levels:
• Monitor at approximately 4 weeks after treatment initiation or change;
• Monitor every 3 months to confirm suppression of viremia to below the limitation of quantification of sensitive commercial assays (Ala).

CD4 cell count:
• Monitor every 3 months after initiation of ART, especially for patients with cell counts of <200 µL;
• results will determine need to initiate or discontinue primary opportunistic infection prophylaxis (BIII)

Recommendations for Ongoing Monitoring

• Monitor at intervals of ≤6 months if viral load is suppressed for 1 year, CD4 cell count is stable at ≥350 µL, and patient’s adherence is dependable (CIII).

• Monitoring is optional if viral load is suppressed consistently for more than 2 years, CD4 cell counts are persistently >500/µL, except in setting of virologic failure or immunosuppressive treatments or conditions (CIII).

• If HIV-1 RNA level is detectable (>50 copies/mL) during therapy, confirm within 4 weeks before making changes (BIII).

• If HIV-1 RNA level is greater than 200 copies/mL during therapy, evaluate factors leading to failure and consider switch in ART (AIIa).

Recommendations for Ongoing Monitoring

• Perform baseline genotypic testing for resistance in all treatment-naive patients (AIIa) and in cases of confirmed virologic failure (Ala).

• Routine therapeutic drug monitoring is not recommended, though selected patients may benefit (BIII).

• Laboratory monitoring for ART toxicity is recommended, guided by presence or absence of comorbidities and by components of the regimen.

Critical issues for Adults with HIV: Presentation of Systematic reviews and Main recommendations

Dr. Meg Doherty, WHO, Geneva
Coordinator Treatment and Care
WHO Rationale: for VL monitoring

• Earlier capture of treatment failure & reducing HIVDR

• Help discriminate between treatment failure & non-adherence

• Lack of viral load or CD4 capacity should not prevent starting ART

• If VL availability limited, phase in use of targeted approach (or CD4/clinical monitoring)

• Same for adults & children
Targeted viral load monitoring (suspected clinical or immunological failure) → Routine viral load monitoring (early detection of virological failure)

Test viral load

Viral load >1000 copies/ml (NEW)

Evaluate for adherence concerns

Repeat viral load testing after 3–6 months

Viral load ≤1000 copies/ml
- Maintain first-line therapy

Viral load >1000 copies/ml
- Switch to second-line therapy
### WHO Recommendations: Monitoring for ART Response

<table>
<thead>
<tr>
<th>RECOMMENDATION</th>
<th>STRENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viral load is recommended as the preferred monitoring approach to diagnose and confirm ARV treatment failure</td>
<td><em>Strong recommendation, low-quality evidence</em></td>
</tr>
<tr>
<td>If viral load is not routinely available, CD4 count and clinical monitoring should be used to diagnose treatment failure</td>
<td><em>Strong recommendation, moderate-quality evidence</em></td>
</tr>
</tbody>
</table>

6 studies (4 RCTs and 2 observational studies)

1. **Clinical+Immunological versus Clinical+Immunological+Virological**: (1 RCT + 1 obs study): no difference in terms of mortality and new AIDS-defining

2. **Clinical+Immunological versus Clinical+Virological**: (1 RCT): no difference in clinical failure, switch to second line regimens, and resistance mutations. Children (Arrow 2013): mortality and disease progression are comparable between clinical and laboratory monitoring
The Effectiveness of QI Strategies: Findings from a Recent Review of Diabetes Care

<table>
<thead>
<tr>
<th>Quality Improvement Strategy</th>
<th>No. of Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Changes</td>
<td>26</td>
</tr>
<tr>
<td>Case Management</td>
<td>26</td>
</tr>
<tr>
<td>Patient Reminders</td>
<td>14</td>
</tr>
<tr>
<td>Patient Education</td>
<td>38</td>
</tr>
<tr>
<td>Electronic Patient Registry</td>
<td>8</td>
</tr>
<tr>
<td>Clinician Education</td>
<td>20</td>
</tr>
<tr>
<td>Facilitated Relay of Clinical Information</td>
<td>15</td>
</tr>
<tr>
<td>Self-Management</td>
<td>20</td>
</tr>
<tr>
<td>Audit and Feedback</td>
<td>9</td>
</tr>
<tr>
<td>Clinician Reminders</td>
<td>18</td>
</tr>
<tr>
<td>Continuous Quality Improvement</td>
<td>3</td>
</tr>
<tr>
<td>All Interventions</td>
<td>66</td>
</tr>
</tbody>
</table>

1.8 Blood pressure therapy

1.8.1 Measure blood pressure at least annually in a person without previously diagnosed hypertension or renal disease. Offer and reinforce preventive lifestyle advice.

1.8.2 For a person on antihypertensive therapy at diagnosis of diabetes, review control of blood pressure and medications used, and make changes only where there is poor control or where current medications are not appropriate because of microvascular complications or metabolic problems.

1.8.3 Repeat blood pressure (BP) measurements within:
   - 1 month if BP is higher than 150/90 mmHg
   - 2 months if BP is higher than 140/80 mmHg
   - 2 months if BP is higher than 130/80 mmHg and there is kidney, eye or cerebrovascular damage.

   Offer lifestyle advice (diet and exercise) at the same time.

1.8.4 Offer lifestyle advice (see dietary recommendations in section 1.2.1 of this guideline and the lifestyle recommendations in section 1.2 of Hypertension: management of hypertension in adults in primary care [NICE clinical guideline 34]) if blood pressure is confirmed as being consistently above 140/80 mmHg (or above 130/80 mmHg if there is kidney, eye or cerebrovascular damage).

1.8.5 Add medications if lifestyle advice does not reduce blood pressure to below 140/80 mmHg (below 130/80 mmHg if there is kidney, eye or cerebrovascular damage).

1.8.6 Monitor blood pressure 1–2-monthly, and intensify therapy if on medications until blood pressure is consistently below 140/80 mmHg (below 130/80 mmHg if there is kidney, eye or cerebrovascular disease).

1.8.7 First-line blood-pressure-lowering therapy should be a once-daily, generic angiotensin-converting enzyme (ACE) inhibitor. Exceptions to this are people of African-Caribbean descent or women for whom there is a possibility of becoming pregnant (see 1.8.8 and 1.8.9).

1.8.8 First-line blood-pressure-lowering therapy for a person of African-Caribbean descent should be an ACE inhibitor plus either a diuretic or a generic calcium-channel antagonist (calcium-channel blocker).

1.8.9 A calcium-channel blocker should be the first-line blood-pressure-lowering therapy for a woman for whom, after an informed discussion, it is agreed there is a possibility of her becoming pregnant.

1.8.10 For a person with continuing intolerance to an ACE inhibitor (other than renal deterioration or hyperkalaemia), substitute an angiotensin II-receptor antagonist for the ACE inhibitor.

1.8.11 If the person's blood pressure is not reduced to the individually agreed target with first-line therapy, add a calcium-channel blocker or a diuretic (usually bendroflumethiazide, 2.5 mg daily). Add the other drug (that is, the calcium-channel blocker or diuretic) if the target is not reached with dual therapy.

1.8.12 If the person's blood pressure is not reduced to the individually agreed target with triple therapy (see 1.8.11), add an alpha-blocker, a beta-blocker or a potassium-sparing diuretic (the last with caution if the individual is already taking an ACE inhibitor or an angiotensin II-receptor antagonist).

1.8.13 Monitor the blood pressure of a person who has attained and consistently remained at his or her blood pressure target every 4–6 months, and check for possible adverse effects of antihypertensive therapy—including the risks from unnecessarily low blood pressure.
The Patient-provider Relationship

Current Realities vs Patient Care Goals

31% of HIV PCPs defined a strong patient-provider relationship as key to retaining HIV patients in care

HealthHIV.[4]
Aging Population of People With HIV Infection in the United States

- Persons age 55 years and older accounted for 19% of the estimated 1.1 million people living with HIV infection in 2010.
- Of an estimated 47,500 new HIV infections in 2010, 5% were among Americans age 55 years and older.

Estimated Diagnoses of HIV Infection, by Age - 2011

- **Older Americans**
- **Other populations**

[CDC website][1]
Anticipated Retirement of Current Generation of HIV Care Providers

- The HIV PCP workforce is aging, majority > 50 years of age
- 59% of HIV PCPs have seen an increase in their total patient caseloads
- 50% of HIV PCPs see > 100 clients and 49% have already seen an increase in their HIV caseloads in the past 12 months
- 59% of HIV PCPs believe their HIV caseloads will further increase over the next 3 years
- 40% of HIV PCPs stated that the number of providers treating HIV in their service area is less than the demand for HIV services

HealthHIV.[4]
Training Family Medicine Residents in HIV Primary Care

- Survey of 440,224 directors of FM residency programs on attitudes about training residents in HIV care
  - 20% said teaching HIV care was a high priority
  - < 25% had a formal HIV curriculum or faculty with expertise in HIV care
  - 25% said graduates were adequately trained in HIV care

- Conclusion
  - FM residency curricula on HIV care in the United States are inadequate to prepare physicians to meet the needs of the growing HIV-infected population.
  - Capacity-building strategies include short interactive training sessions, promoting HIV expertise among interested faculty members, and wider use of online resources

Positive voices UK

- 98% felt they received enough information about their HIV
- 96% felt supported to self-manage their HIV
- 93% felt involved with decision about their care.
- A lower proportion (74%) felt their HIV specialist and GP communicated well regarding their health.
- Three-quarters (76%) of respondents rated their health as “good” or “very good”.
Why do we monitor patients?

- Doctor patient relationship
- Continuity of care
- Support
summary

• Increasing evidence of safety with less frequent monitoring needed for stable patients
• Treatment is getting safer, cheaper and more durable
• More intensive input in first year or two
• HIV is not quite diabetes yet but is a chronic care condition
• Our patients and ourselves are getting older
• Need for more involvement of primary care and patient self care in stable patients (more than 2 years undetectable VL)
Thanks

• Gary Brook
• BHIVA monitoring guidelines committee