Differentiated Care – Improving Engagement and Retention in HIV Care

Meg Doherty, MD PhD MPH
World Health Organization
• Why differentiated care and how can it facilitate epidemic control
• Effects on linkage, engagement and retention in care
• Recent advances in HIV service delivery approaches
• Country examples of success
Status Treat All Uptake in 2018
Is “Treat All” having an impact?

ART Initiation 3 months after enrollment by CD4 Count

Tymejczyk et al Plos Med 2018 (updated)

Treat All (UTT) increases the number of people starting ART within 3 months (among those eligible for ART)
Still major gaps in the care cascade -- linkage, retention and viral suppression

- People living with HIV: 36.7 million
- People living with HIV who know their status: 25.5 million
- People living with HIV who are receiving ART: 19.5 million
- People living with HIV and viral suppression: 16.0 million

Proportion of patients retained in care over time from ART start (in years)
Epidemic Control

PEPFAR - cross point incidence vs. mortality

UNAIDS Consultation – Incidence:prevalence ratio
Why Differentiated Service Delivery?

- To improve client experience
- To improve health outcomes
- Leverage resources to “treat all” and achieve 90-90-90

- Reduced clinic visits for clients who are doing well
- Clinic services directed to those patients who need clinic care
Differentiated Service Delivery: building blocks

For ART refills

For clinical consultations

For psychosocial support

How frequently are services provided?

Who can provide the services?

When

Where

What

Where are services provided?

What services are provided?

www.differentiatedcare.org
Models for Clinically Stable Clients

<table>
<thead>
<tr>
<th>Models</th>
<th>Individual</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Facility Based</td>
<td>Fast Track visits</td>
<td>ART Clubs</td>
</tr>
<tr>
<td></td>
<td>Spacing of visits</td>
<td>Adolescent clubs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family visits</td>
</tr>
<tr>
<td>Community Based</td>
<td>PODI – drug pick ups</td>
<td>Community ART delivery</td>
</tr>
<tr>
<td></td>
<td>ART delivery to home</td>
<td>Adherence Groups</td>
</tr>
</tbody>
</table>

www.differentiatedcare.org
WHO recommendations supporting DSD for clinically stable clients

**WHEN**
- 3-6 monthly ART refills
- 3-6 monthly clinic visits

**WHERE**
- ART maintenance at community level

**WHO**
- Trained non-physicians/nurses/midwives can initiate and maintain ART
- Trained/supervised lay providers can distribute ART
- Trained/supervised CHWs can dispense ART between clinic visits
• Why differentiated care and how can it facilitate epidemic control
• Effects on linkage, engagement and retention in care
• Recent advances in HIV service delivery approaches
• Country examples of success
DSD Policy uptake what do we know?

✓ Data reported to WHO, validated by MoH
✓ Data up to end 2016 (2017 in validation)
  – Frequency of clinic visits
  – Frequency of ART dispensing
  – Nurse-led ART
  – Community ART
WHEN: Frequency of clinic visits

AFRO | SEARO | WPRO | AMRO | EMRO | EURO
---|---|---|---|---|---
1 month | | | | | |
3 months | | | | | |
6 months | | | | | |
WHEN: Frequency of dispensing
WHO: Nurse led ART

[Bar chart showing nurse led ART across different regions (AFRO, SEARO, WPRO, AMRO, EMRO, EURO) for adults and children.]
WHERE: Community ART

- **AFRO**
  - Yes: 60%
  - No: 40%

- **SEARO**
  - Yes: 80%
  - No: 20%

- **WPRO**
  - Yes: 70%
  - No: 30%

- **AMRO**
  - Yes: 90%
  - No: 10%

- **EURO**
  - Yes: 85%
  - No: 15%

- **EMRO**
  - Yes: 75%
  - No: 25%
Benefits of differentiated service delivery

6 monthly clinic visits improves retention in Zambia

Good adherence with 3 monthly clinic visits in Spain

Home delivery of ART feasible and improves outcomes in UK & Spain

3 monthly clinic visits reduces costs to patients and health system in Kenya and Uganda

Mody, Clin Inf Dis 2017

Munoz-Moreno, IAS 2016

Leon PlosONE 2011; Harte I J STD AIDS 2008
• Why differentiated care and how can it facilitate epidemic control
• Effects on linkage, engagement and retention in care
• Recent advances in HIV service delivery approaches
• Country examples of success
HIV TREATMENT

Decision Framework for key populations

Service Delivery Approached

- The HOW: Differentiated care interventions:
  - Treat patients differently within a public health system.

Service & retention support

- Differentiated care ART delivery - Differentiated Care Models

- Service switch

- The Package of Care (for individuals with
  - Rapid diagnostic tests
  - Systematic CD4 monitoring
  - TB screening
  - Screening for toxoplasmosis and cotrimoxazole prophylaxis
  - Intensive follow-up

KEY CONSIDERATIONS FOR DIFFERENTIATED ANTIRETROVIRAL THERAPY DELIVERY FOR SPECIFIC POPULATIONS:

- Children, adolescents, pregnant and breastfeeding women, and key populations

CD4 monitoring stopped where viral load is available

World Health Organization CDC PEPFAR USAID LSX
DSD for families and key populations

- Clinically stable children, adolescents and pregnant and breastfeeding women as well as members of key populations can benefit from differentiated antiretroviral therapy (ART) delivery models
- Services should be tailored to keep families together
- Differentiated ART delivery can address inequities and enable key population communities to be more involved in HIV treatment and care
# Real-world examples

**Building blocks of female sex worker community-client led ART delivery in Entebbe, Uganda**

<table>
<thead>
<tr>
<th>WHEN</th>
<th>ART REFILLS</th>
<th>CLINICAL CONSULTATIONS</th>
<th>PSYCHOSOCIAL SUPPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEN</td>
<td>Every two months, 6 times/year Flexible service hours, decided by the group</td>
<td>Semi-annually (2 times/year)</td>
<td>Every time months or more as required</td>
</tr>
<tr>
<td>WHERE</td>
<td>Community: (Community Drug Distribution Point (CDDP))</td>
<td>Primary care clinic</td>
<td>Community</td>
</tr>
<tr>
<td>WHO</td>
<td>Group nominated FSW peer leader</td>
<td>Doctor or clinical officer</td>
<td>Group nominated FSW peer leader</td>
</tr>
<tr>
<td>WHAT</td>
<td>ART refill distribution, peer psychosocial support, peer adherence monitoring, psychosocial support</td>
<td>Nutrition monitoring, adherence measurement, TB screening, OI examinations if any, Lab investigation (VL and CD4), weight monitoring, Mental Health screening, dosage adjustment as required</td>
<td>Peer psychosocial support</td>
</tr>
</tbody>
</table>
Differentiated service delivery applies across the HIV care continuum.

- Prevention
- 90% Diagnosed
- 90% On Treatment
- 90% Virally Suppressed

Differentiated HIV testing
Differentiated ART delivery
Differentiated HIV testing services

Mobilizing
- Mass/Group
- Network-based
- Partner notification and index testing

Testing
- Health facility
- Non-health facility
- Community
- Self-testing*

Linking
- Referral
- Accompaniment
- Compensation/incentives
- Same day initiation
- Friendly services
- Tracing
Decision Framework for HIV testing services

- **For mobilizing**
- **For testing**
- **For linking**

**WHEN**
- How often are services provided?

**WHERE**
- Where are services provided?

**WHO**
- Who can provide services?

**WHAT**
- What services are provided?
### Real-world examples

#### Building blocks of reaching men in Eshowe, South Africa

<table>
<thead>
<tr>
<th>WHEN</th>
<th>MOBILIZING</th>
<th>TESTING</th>
<th>LINKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Routine outreach and mobilization by male providers and mobilizers</td>
<td>Routine offer</td>
<td>Following HIV-positive test</td>
</tr>
<tr>
<td>WHERE</td>
<td>Taxi ranks and locations where men hang out</td>
<td>Male-friendly satellite clinic; workplace (farm)</td>
<td>Clinics near farm and VMMC</td>
</tr>
<tr>
<td></td>
<td>On the farm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHO</td>
<td>Male providers, counsellors and mobilizers</td>
<td>Male health workers and counsellors</td>
<td>Male providers, counsellors and mobilizers</td>
</tr>
<tr>
<td>WHAT</td>
<td>Community mobilization by all male counsellors and mobilizers</td>
<td>Rapid HIV testing, and screening for STIs, NCDs and TB</td>
<td>ART initiation</td>
</tr>
</tbody>
</table>
• Why differentiated care and how can it facilitate epidemic control
• Effects on linkage, engagement and retention in care
• Recent advances in HIV service delivery approaches
• Country examples of success
### Benefits and risks of rapid initiation of antiretroviral therapy

**Nathan Ford**, Chantal Migeon, Alexandra Calmy, Bernhard Hirschel, Steve Kanters, Sabin Nsanzima, Edward J. Mills, Graeme Meintjes, Marco Vitoria, Meg Doherty and Zara Shubbel

**Background:** Recent attention has focused on questions of how quickly antiretroviral therapy (ART) should be initiated in people newly diagnosed with HIV. Different views on whether rapid ART initiation improves patient outcomes.

**Methods:** We performed a systematic review and meta-analysis using all available studies.

**Results:** Across the randomized trials, ART start in the same day increased viral suppression at 12 months in the standard arm (OR 1.5; 95% CI 1.3–1.6) and 12 months after ART initiation, was established (95% CI 1.3–1.5). There were no significant differences in virological outcomes, but ART start within 24 hours decreased the risk of death at 6 months by 30% (95% CI 0.7–0.9) and 36% (95% CI 0.5–0.7) at 12 months. However, these results were not statistically significant.

**Conclusion:** ART initiation can be safely delayed, but it is likely to be of particular benefit in these settings where extensive patient preparation prior to starting ART results in long delays. The long-term benefits for ART initiation in the first few weeks of infection require further investigation.

---

### Accelerated ART initiation

<table>
<thead>
<tr>
<th>Study</th>
<th>Relative risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART start 90 days</td>
<td></td>
</tr>
<tr>
<td>Labhart</td>
<td>1.95 (1.51, 2.50)</td>
</tr>
<tr>
<td>Rosen</td>
<td>1.36 (1.24, 1.49)</td>
</tr>
<tr>
<td>Amaryire</td>
<td>1.28 (1.18, 1.38)</td>
</tr>
<tr>
<td>Koeng</td>
<td>1.12 (1.08, 1.16)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1.35 (1.13, 1.62)</td>
</tr>
<tr>
<td>Remaining in care 12 months</td>
<td></td>
</tr>
<tr>
<td>Koeng</td>
<td>1.11 (1.02, 1.21)</td>
</tr>
<tr>
<td>Amaryire</td>
<td>1.01 (0.94, 1.08)</td>
</tr>
<tr>
<td>Rosen</td>
<td>1.27 (1.12, 1.44)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1.11 (0.99, 1.26)</td>
</tr>
<tr>
<td>Viral suppression 12 months</td>
<td></td>
</tr>
<tr>
<td>Amaryire</td>
<td>1.09 (0.94, 1.26)</td>
</tr>
<tr>
<td>Koeng</td>
<td>1.18 (1.04, 1.35)</td>
</tr>
<tr>
<td>Rosen</td>
<td>1.26 (1.05, 1.50)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1.17 (1.07, 1.27)</td>
</tr>
<tr>
<td>LTFU 12 months</td>
<td></td>
</tr>
<tr>
<td>Rosen</td>
<td>0.47 (0.23, 0.92)</td>
</tr>
<tr>
<td>Koeng</td>
<td>0.77 (0.57, 1.04)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>0.66 (0.42, 1.02)</td>
</tr>
<tr>
<td>Died 12 months</td>
<td></td>
</tr>
<tr>
<td>Amaryire</td>
<td>0.77 (0.21, 2.81)</td>
</tr>
<tr>
<td>Koeng</td>
<td>0.51 (0.24, 1.08)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>0.53 (0.28, 1.00)</td>
</tr>
</tbody>
</table>

**Reference:** AIDS 2018; Plos Med 2016

---

WHO Recommendation

Rapid ART initiation* should be offered to all people living with HIV following a confirmed HIV diagnosis and clinical assessment *(Strong recommendation: high-quality evidence for adults and adolescents; low-quality evidence for children)*

*Rapid initiation is defined as within seven days from the day of HIV diagnosis; people with advanced HIV disease should be given priority for assessment and initiation.*

ART initiation should be offered on the same day to people who are ready to start. *(Strong recommendation: high-quality evidence for adults and adolescents; low-quality evidence for children)*
Advanced HIV disease

Number on ART: 7.5 in 2011, 19.5 in 2016
Number of deaths: 1.9 in 2011, 1 in 2016

WHO/UNAIDS 2017
Advanced HIV disease

South Africa
33% starting ART with advanced HIV disease

46 countries
31% starting ART with advanced HIV disease

Carmona S et al, Clin Inf Dis 2018; IeDEA and COHERE, Clin Inf Dis 2017
Advanced HIV disease: a public health approach

Ford et al, Lancet HIV 2016
### Package of care for people with advanced HIV disease: Screening

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Prophylaxis</th>
<th>ART initiation</th>
<th>Adapted adherence support</th>
</tr>
</thead>
<tbody>
<tr>
<td>XPERT MTB/RIF as first test for TB</td>
<td>Cotrimoxazole prophylaxis</td>
<td>Rapid ART initiation</td>
<td>Tailored counselling for adherence</td>
</tr>
<tr>
<td>LF-LAM for TB diagnosis among people with signs and symptoms</td>
<td>TB preventive treatment</td>
<td>Defer if clinical symptoms suggest TB or cryptococcal meningitis</td>
<td></td>
</tr>
<tr>
<td>Cryptococcal antigen screening</td>
<td>Fluconazole pre-emptive therapy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### INH/B6/CTX scored FDC
Half doses if <12 years

<table>
<thead>
<tr>
<th>Antigen screening</th>
<th>Emptive therapy</th>
</tr>
</thead>
</table>
WHO guidelines for cryptococcal disease

- Diagnosis
- Prevention and screening
- Treatment (1 week Ampho B + Flucytosine)
- (non) use of corticosteroids
- Timing of ART

Shorter induction treatment = better outcomes
### WHO recommendations supporting patients with advanced HIV disease

<table>
<thead>
<tr>
<th>WHEN?</th>
<th>Close follow-up required</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Training and mentorship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Follow-up mechanisms, adherence support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHERE?</th>
<th>Hospital &amp; peripheral sites according to clinical status of the person, clinical skills of healthcare workers and access to diagnostics</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Clear care pathways with access to high-level clinical management when required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHO?</th>
<th>Task-sharing to nurses and other mid-level healthcare workers</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Training and mentorship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clear referral criteria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clear care pathways</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHAT?</th>
<th>WHO package of care for advanced disease</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• CD4 cell count testing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Point of care diagnostics (CD4, Urine LAM, CrAg, Gene Xpert)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Access to medicines: Co-trimoxazole, TB preventative therapy (IPT), fluconazole as well as ART</td>
</tr>
</tbody>
</table>
• Why differentiated care and how can it facilitate epidemic control
• Effects on linkage, engagement and retention in care
• Recent advances in HIV service delivery approaches
• Country examples of success
Differentiated service delivery: Ghana

Led by Ghana Health Service/National AIDS Control Programme

✓ Differentiated Service Delivery Operational Manual 2017
✓ Stakeholders:
  • Community Health Nurses, Community Health Workers
  • Clinician supervisors
  • Models of Hope (PLHIV)
  • Partners (WHO, GF, UNAIDS, GAC, CBOs, NGOs (EQUIP), NAP+)
Differentiated service delivery: Ghana

Treat All Policy adoption: stable, advanced disease, PW, children, adolescents, KPs

✓ Adolescent clinic days
✓ Targeted activities for key populations
✓ Refills for stable patients scheduled on different days to new enrollements
✓ Multi month prescribing and dispensing (6 months)
Differentiated Care in Cameroon

**Target:**
- ✓ Increase ART coverage by 33%
- ✓ Improve ART retention from 60% in 2014 to 90% in 2020

**Community ART delivery in 3 models:**
- • PODI (Point de Dispensation Communautaire)
- • Support Groups or Adherence clubs
- • Community ART groups
Increasing trend in ART delivered by community Cameroon -- June to December 2017

Source: Anne Marie WEDROGO and James Clovis KAYO | Consultants DAT ONUSIDA
Summary

• DSD not just for stable clients
  – is for children, adolescents, pregnant women, key populations and those with advanced disease
  – Is for testing and linkage

• DSD policies vary in uptake and implementation
  – 1/3/6/12 months ART dispensing with 3 mos. most common
  – Implementation of clinic visit spacing more common than ART dispensing
  – Community ART: further progress can be made
  – Task shifting for children remains limited

• Real world experience
  – Improved linkage
  – Improved retention and VL suppression
  – Helping countries with poor ARV coverage to take programmes to scale
It’s time to *test* and *treat* differently: Comparing and contrasting differentiated service delivery along the HIV care cascade from countries and communities

**Satellite session at AIDS 2018**
Organized by the International AIDS Society and World Health Organization
Date and time: Monday, July 23rd, TBC (08h00-10h00)

- Decision Framework for key populations
- Decision Framework for HIV testing services
Online knowledge repository

www.differentiatedcare.org

Global and country guidance

• ART delivery model examples & tools
• Published evidence & resources

Acknowledgements

Nathan Ford
Anna Grimsrud
Chantal Migone
Annette Verster
Virginia MacDonald