Focusing the clinical response
Can Differentiated care accelerate the implementation of HIV treatment for all?

Southern African MSF medical unit, School of public health, Cape Town university
Framework for differentiated approach to care

- Different Care package elements for different PLHIV categories
  1. Patients presenting well
  2. Patients presenting with advanced HIV infection
  3. Stable patients on ART stable
  4. Patients on ART with complex problems

Fig. 3. Key factors in differentiated approaches to HIV care
HIV care for epidemic control
Ambitions vs reality

- 37 million people living with HIV
- 90% of them know their status (33 million people)
- 90% of them initiated on ART (30 million people)
- 90% of them with undetectable viral load (27 million people)
- 55% of them know their status (20 million people)
- 75% started on antiretroviral treatment (15 million people)
- 45% with an undetectable viral load* (7 million people)

Treatment cascade or treatment cliff? Successful HIV treatment, as measured by an undetectable viral load, is key for epidemic control. Reaching the 90-90-90 UNAIDS targets will require considerable future commitment and investment.

*For MP: Rosen S. Retention of Adult Patients on Antiretroviral Therapy in Low- and Middle-Income Countries: Systematic Review and Meta-analysis 2009-2013

Source: UNAIDS
ART treatment cascade: focus on back end

- **Facility based HIV testing**
- **Linkage to Care** → **Initiation on ART**
- **Retention in care**
  - **Undetect. CV**
  - **Chronic care**
  - **Monthly ART supply**
Main MSF models of differentiated ART delivery
Aim: reduce burden for patients AND health care workers

Delinking clinical consultation from ART refill for stable patients on ART

**Context**
- Urban & rural

**ART refill**
- 1 to 3-monthly
- 2-6 monthly
- 3-monthly
- 1 to 3 Monthly

**Mode**
- Individual
- Group
- Individual
- Group

**Where**
- Health facility
- Health facility or community venues
- Community distribution points
- Patients’ homes

**Led by**
- CHW
- CHW
- Expert patients
- Expert patients

**Clinical consultation**
- Yearly
- Yearly
- Yearly
- Yearly

**Blood drawing**
- Yearly viral load
- Yearly viral load
- Yearly viral load
- Yearly viral load

**Appointment spacing and fast-track drug refill**

**Adherence Clubs**
- Facility-based clubs
- Community-based clubs

**Community ART Distribution Points (PODI)**

**Community ART Groups (CAGs)**
Designing the appropriate model: logical framework

- Environmental context: Urban <> rural
- Subpopulation: Adult, Paeds, Pregnant and BF
- MEDICAL NEED: Routine, Intense
- Key populations
- Stable <> unstable
- Free <> users fees
- Low prevalence <> High prevalence

Environmental settings:
- Appointment spacing/fast track
- Adherence Clubs
- Community ART distr (PODI)
- Community ART Groups (CAGs)
“The amount of time we spend at the health facility in the queues – it's too much time. I want to come to the facility only twice a year... I have a life to live.”

- Patricia Asero Achieng, PLHIV, Kenya

AN ONLINE KNOWLEDGE REPOSITORY FOR DIFFERENTIATED CARE

This is the go-to resource and online recipe book for implementing differentiated models of antiretroviral therapy (ART) delivery.

Visit www.differentiatedcare.org
Can we have 70-80% of all ART chronic patients on community models?

City of Cape Town, South Africa

Data sources: sinjani.pgwc.gov.za; community club registers
Clinical outcomes may in fact be superior when it comes to selected outcomes such as retention in HIV care and viral suppression (Khayelitsha and Kinshasa). In building decentralized ART delivery, adherence, and retention in care support, community-based ART programs encourage patient autonomy, build social networks, and minimize the structural barriers, such as cost of transport to the clinic, which in turn appear to result in better outcomes.

## Policy and resources: critical enablers

- **Task shifting to community health workers**
- **Access to quality clinical management**
- **Robust drug supply**

<table>
<thead>
<tr>
<th></th>
<th>Cost per patient /year</th>
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<tr>
<td>Adherence club</td>
<td>300 US$</td>
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<tr>
<td>Conventional care</td>
<td>374 US$</td>
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Cost-effectiveness and access analysis from Khayelitsha Adherence clubs Funeka Bango and all, UCT Health Economics Unit
ART treatment cascade: focus on front doors

Front doors

1

PITC

PITC

Community testing

Linkage to Care

Initiation on ART

Retention in care

Retention in care

Undetect. CV
Not everyone is equal when looking at HIV transmission
Community survey, KZN, South Africa, 2013

Awareness: 75.2%
(95% CI: 72.9-77.4)

- Women: 77.7% (95% CI: 75.1-80.1)
- Men: 67.3% (95% CI: ____________)

Source: Helena Huarga, Epicentre, CROI 2016

Infection risk: VL level + sexual behaviour

Source: Helena Huarga, Epicentre, CROI 2016
Moving differentiated care at the front end of cascade, PLHA’s with VL > 1000 cp/ml, Eshowe, KZN, SA 2016
HIV Treatment Cascade in Eshowe, KZN

- **100%** of people living with HIV
- **75%** of them know their status
- **55%** of those aware of status are initiated on ART
- **56%** of those on ART have an undetectable viral load
Number of yearly ART initiations
Eshowe, KZN, South Africa

<table>
<thead>
<tr>
<th>Year</th>
<th>CD4 Not Availale</th>
<th>&lt;200</th>
<th>200-350</th>
<th>351-500</th>
<th>&gt;500</th>
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<td>2014</td>
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<tr>
<td>2015</td>
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</tbody>
</table>

Number of ART initiations

- 2010: 1139
- 2011: 1429
- 2012: 2817
- 2013: 3136
- 2014: 3247
- 2015: 2625
Enhanced linkage to care <> community initiation
Tete, Mozambique <> Khayelitsha , South Africa

- Mobile community testing / POC CD4
  - Staffed by lay HCWs + nurse

CD4>350
CD4<350 (or choice)

Refer to closest clinic with linkage support strategy ->SOC

Slide courtesy of Lynne Wilkinson
Ongoing advanced HIV disease presentations despite increasing median CD4 at initiation. Western Cape, South Africa

Community CD4 count as a marker of morbidity potential: Results from the Western Cape, South Africa. M. Osler, A. Boulle, UCT
Stage IV disappeared in some countries with ARV coverage...but not in others

Number of cases of AIDS-related extrapulmonary cryptococcosis cases.

Slide courtesy of Graeme Meintjes
ART treatment cascade

- Front doors
  - PITC
  - Community testing

- Re-entries
  - Side doors
  - Re-initiating

- Failures
  - Drop-out

- Late presenters
  - Symptomatic

- Linkage to Care
  - Initiation on ART

- Retention in care
  - Undetect. CV

1

2
Front door: Evolution of late presenters ratio (CD4< 100)
Health centers levels in 2 capital cities

**Kinshasa** – 6 facilities
9179 ever initiated – low prevalence

**Conakry** – 5 facilities – 6553 ever initiated – low prevalence

Source: Tier.net monitoring, Cider, UCT, Katherine Hilderbrand
HIV-Related Medical Admissions in 3 referral hospitals Cape Town, SA, Kinshasa, DRC and Homa Bay, Kenya

- In-hospital mortality: 30-35%.
- Post discharge mortality: unknown, probably about 50%.

**GF Jooste hospital, Cape Town, South Africa, June 2012 -October 2013, n=609**

- 64% Naïve
- 19% On ART/Failure
- 19% Interrupted

**CHK Hospital, Kinshasa, n=1285**

- 77% Sous ARV
- 23% Stop > 3 mois
- 19% Naïf

**Homa Bay Hospital, Kenya**

- Mortality: 29%.
- Post discharge mortality: unknown, probably reaches up to 40%.

Graeme Meintjes and all, Medicine Volume 94, Number 50, Dec 2015

Maria Mashako, MSF/ITM
Late presenters proposed screening package
PHC level ( < 100 Cd4 or symptomatic)

Minimal PHC screening package
- Semi quantitative CD4 LFA
- TB LAM test: GeneXpert access
- CRAG test
- TDF blood level tests (DBS)
- Point mutation genotype?

+ Clinical management of non naïve patients including referral criteria + aggressive approach (counselling, VL algorithm, 2\textsuperscript{nd} line switch)
CLINICAL MANAGEMENT OF PATIENTS WITH ADVANCED HIV DISEASE

(i.e. those presenting with CD4 count < 200 CD4 cells/mm3 or WHO Stage III & IV defining illness)

IMPORTANT BASICS

- Perform a thorough clinical examination.
- Check all 4 vital signs: pulse, respiratory rate, temperature and blood pressure.
- Rehydrate if signs of dehydration (due to diarrhea, vomiting, or other causes).
- Admit a clinically unstable patient to hospital!
- Sepsis is common in advanced disease. If a fever is present, examine thoroughly to find the site. If there is likely to be a delay in admission and a severe bacterial infection is suspected (e.g., pneumonia), give the first dose of antibiotics i.m. or i.v. - e.g., ceftriaxone
- Respiratory disease is also common in advanced disease. Consider especially TB and bacterial or pneumocystis pneumonia (PCP). Administer oxygen if short of breath (including nasal flaring in children) and oxygen saturation <90% (strongly consider PCP). If respiratory rate > 30 admit to hospital

EVALUATE FOR EPTB
CHEST X-RAY presentations of PTB in HIV patients are well characterized

- Nodules
- Caviations
- Enlarged lymph nodes
- Milieuty pattern

SCREEN AND EVALUATE FOR PULMONARY TB
CHEST X-RAYS features of EPTB

- Large heart in TB pericarditis (especially if asymmetric and rounded)
- Tuberculosis related pleural effusion
- Needle aspiration of an inflammatory mediastinal mass

In patients with CD4 < 100, test urine for disseminated TB antigen with Determine TB LAM

ABDOMINAL TB CAREFUL PALPATION for abdominal tenderness (especially epigastric area) can indicate organomegaly and/or abdominal lymph nodes due to EPTB

Confirm if possible with ultrasound

TEST FOR CRYPTOCOCCAL ANTIGEN (CRAG)

- SCREEN all patients with CD4 < 100 with a rapid sero or plasma CrAg test. If positive, need to decide if patient might have cryptococcal meningitis:
  1. LUMBAR PUNCTURE (LP) should be performed in all those with headache, confusion, and/or change in behaviour, provided that capacity exists and there are no contraindications:
     - Test CSF for evidence of:
       - CCM, preferably with a rapid CrAg assay
       - Bacterial meningitis
       - TB meningitis (TBM)
  2. If CrAg+ and none of above symptoms, give 'pre-emptive' antifungal therapy (see WHO rapid advice algorithm, 2011)

BE AWARE OF THE SYMPTOMS OF TOXOPLASMOsis

Any person with focal neurological impairment - (stroke, weak limbs), co-ordination problems, facial weakness, speech difficulty - may have an intracranial lesion due to one of several infections, including toxoplasmosis, and should be referred urgently for more comprehensive evaluation

EVALUATE VISION AND REFER, ESPECIALLY IF RECENT DETERIORATION
CMV retinitis can cause permanent blindness if left untreated. Either examine the fundi yourself using an ophthalmoscope and dilating drops (cyclopentolate or tropicamide) or refer for full evaluation and treatment

CHECK PALATE AND SKIN for purplish lesions of Kaposi's Sarcoma

LATE PRESENTERS’ NEED
All patients with advanced HIV disease need antiretroviral therapy (ART)
- Initiate within 2 weeks if possible.
- Important exceptions:
  - Wait 6-8 weeks after initiation of treatment for TB and cryptococcal meningitis to avoid life-threatening intracranial IRIS
  - Wait 2 weeks after initiation of all other TB treatment if CD4 < 50
  - Wait 2-4 weeks after initiation of all other ART if CD4 > 50

1. WHO Rapid Advice on Diagnostics, Prevention and Management of Cerebral Disease in HIV-infected Adults, Adolescents, and Children (2011). Implementations in HIV-infected adults and adolescents may vary based on local epidemiology and resource availability. Please consult your national and local guidelines for further information.
Conclusions

• Differentiated models of care can help to accelerate the 90 90-90 by
  – offloading workload from overburden health services
  – increasing social fabric and adherence
• Differentiated models also apply at front end of cascade (non sick, non health seeking clients) and central part (care)
• AIDS is not over in SS Africa: still unacceptable number of deaths! Advanced HIV diseases management remains an ongoing priority
• We need new tools like new diagnostics and ARV formulation compound including long acting injectable/implants as well as new delivery models to control this pandemic.
Acknowledgments

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