

Supporting ART adherence

Catherine Orrell

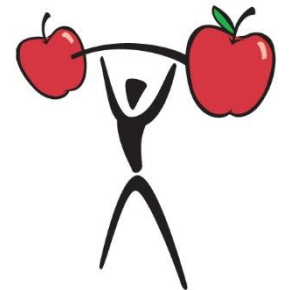
Desmond Tutu HIV Foundation

October 2016



Benefits of ART:

- For individuals: HIV becomes a manageable chronic illness
- For sexual partners: risk of transmission is reduced (includes PrEP)
- For countries: maintains a healthy & economically active population



Difficulties of ART:

Seem to focus on individuals...

- Choice to start ART (**initiation**);
- Daily dosing of medication as treatment or PrEP, possible side effects (**implementation**);
- Need for long-term relationship with health care system (**persistence**).



Question 1 – Primary non-adherence

In 2010, a US study was published in the Journal of General Internal Medicine (Fischer et al 2010) which looked at “primary non-adherence” defined as failure to fill prescriptions when new medications were started. Researchers reviewed 75 589 patients with 195 930 e-prescriptions for new medications prescribed by 1,217 prescribers over a one year period.

What proportion of these prescriptions do you think were not filled?



Question 1 - answers

1) 43%

2) 7%

3) 28%

4) 12%

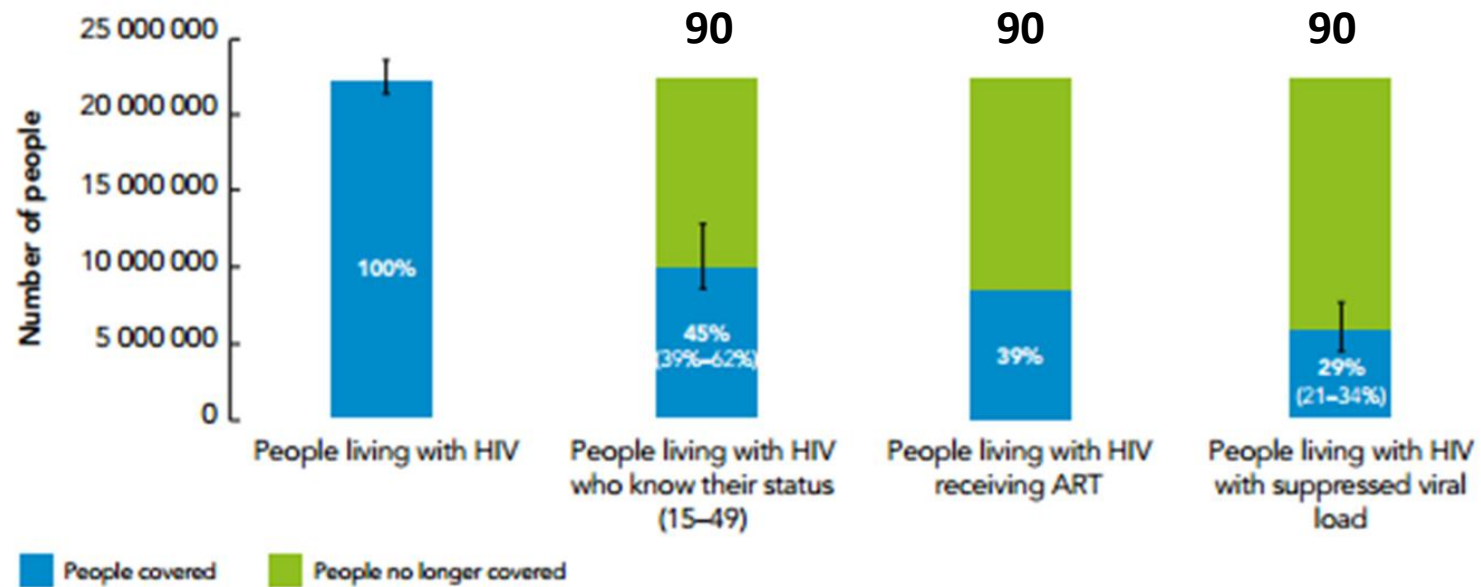


- In addition - medication was not continued as prescribed in about 50% of cases.
- Rates of medication adherence drop after first six months.
- Lower adherence in the young and where practice sizes were large...



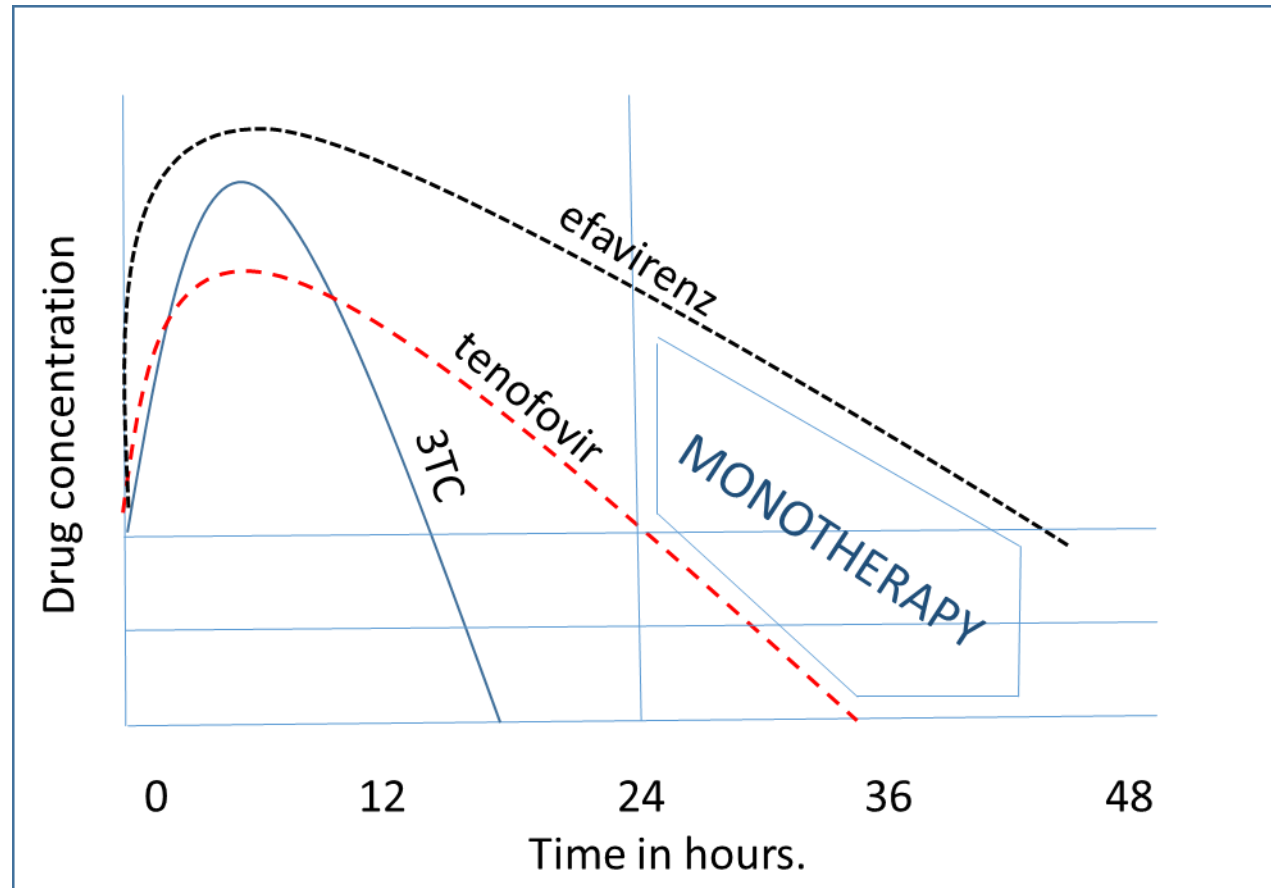
The third 90...

Abbreviated HIV treatment cascade for adults in sub-Saharan Africa aged 15 years or more, 2013



UNAIDS 2013 estimates

Impact of missed doses



Rates of failure (implementation):

Figure 3. Kaplan–Meier failure estimate for time to first, then second consecutive HIV RNA level >1,000 copies/ml

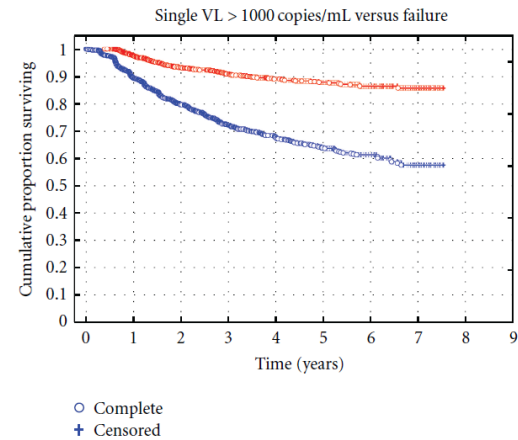
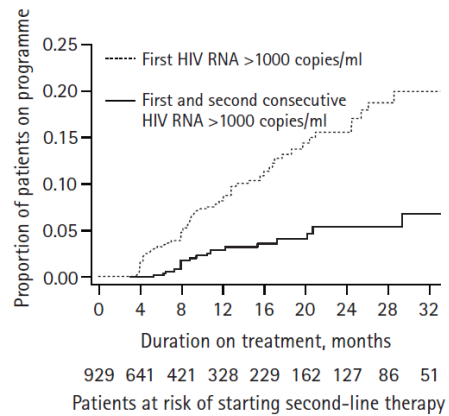
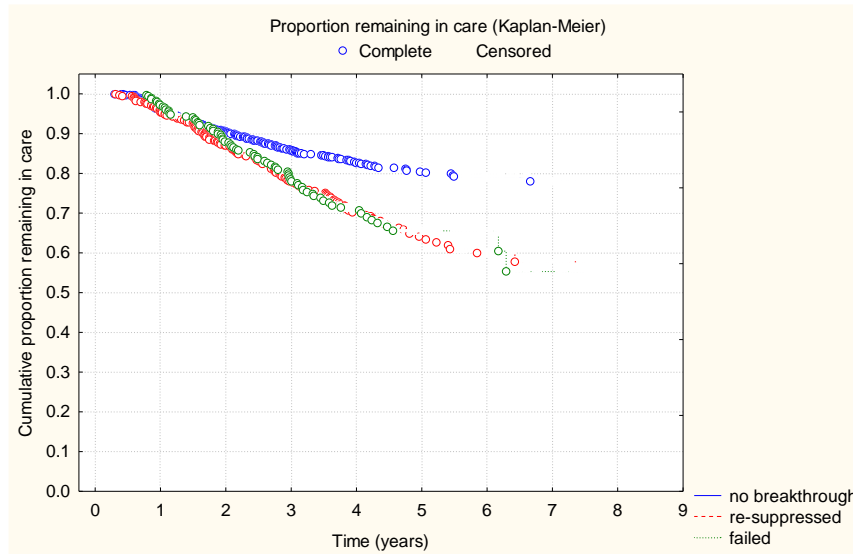


FIGURE 2: A Kaplan-Meier survival curve depicting risk of an initial virological breakthrough (first viral load >1000 copies/mL after initial suppression—lower curve) and subsequent risk of virological failure (second consecutive viral load >1000 copies/mL—upper curve). Of those with virological breakthrough an expected 66% will resuppress after an adherence intervention.

Orrell, AIDS Research and Treatment 2011

Retention in care (persistence):



Orrell, AIDS Research and Treatment 2011

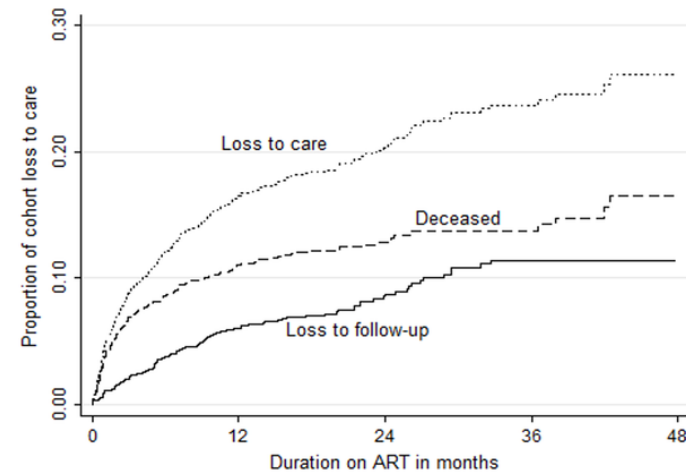


Figure 1. Kaplan-Meier estimates of LTFU, mortality and loss to care by months.
Boyles Plos One 2011 (Eastern Cape)

Question 2:

What is the best way to monitor adherence?

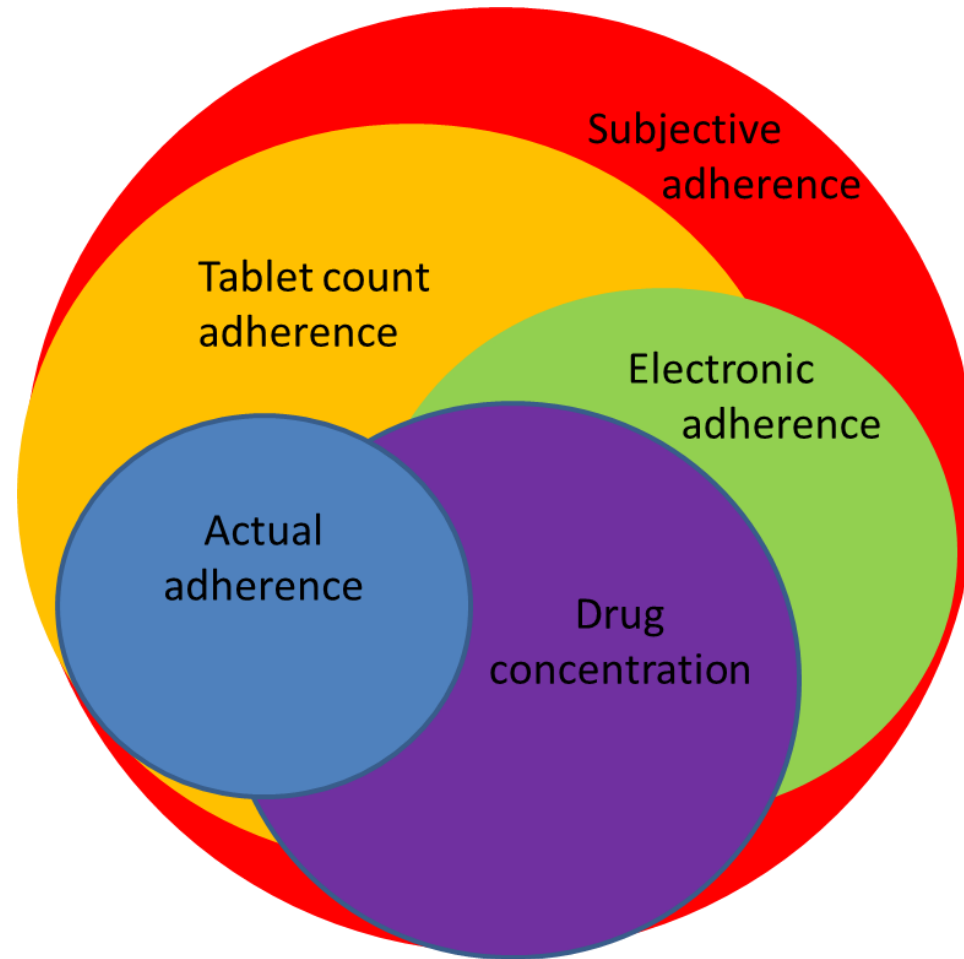


Question 2 - answers:

- a. Count the tablets that the patient brings back.
- b. Check on the pharmacy system to see how many months of ART have been collected in the last year.
- c. Invest in electronic pill-boxes with real-time monitoring.
- d. Ask the patient, they know the best.
- e. All of the above.
- f. We do not know.



First, we need to assess adherence...

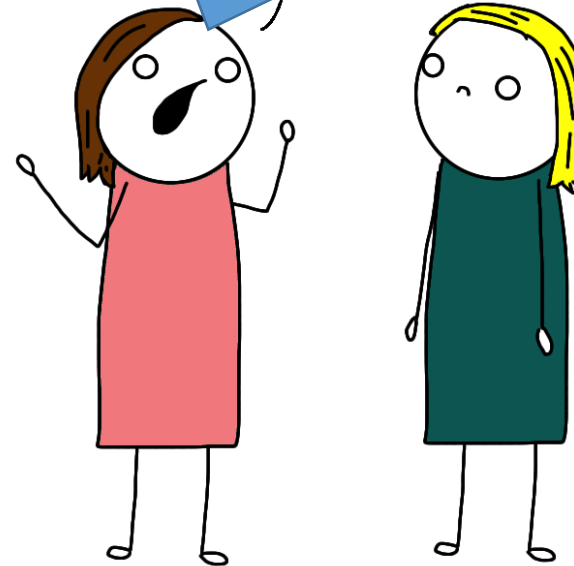


Assessing adherence

Self-report:
Important to ask, but
not often accurate.

Can try: VAS scales,
motivational
interviewing.

Yes, doctor, I
have taken ALL
my medicine...



Assessing adherence...

Pharmacy refill:

Were the correct number of bottles of ART collected over the past 4 or 12 months?

Many sites collect electronic dispensing data – but it is not well used.



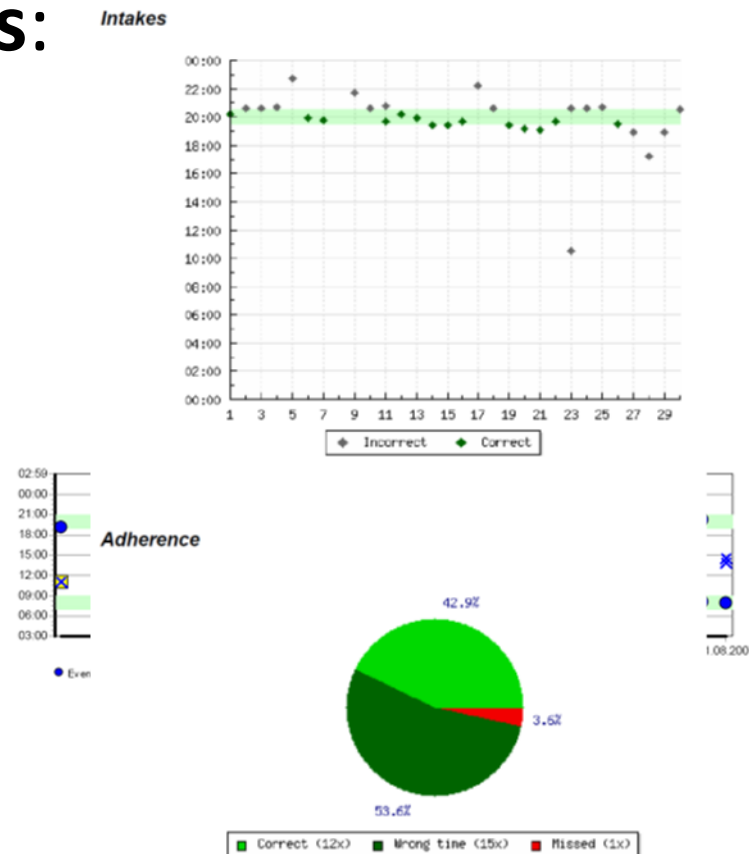
Assessing adherence...

Electronic methods:

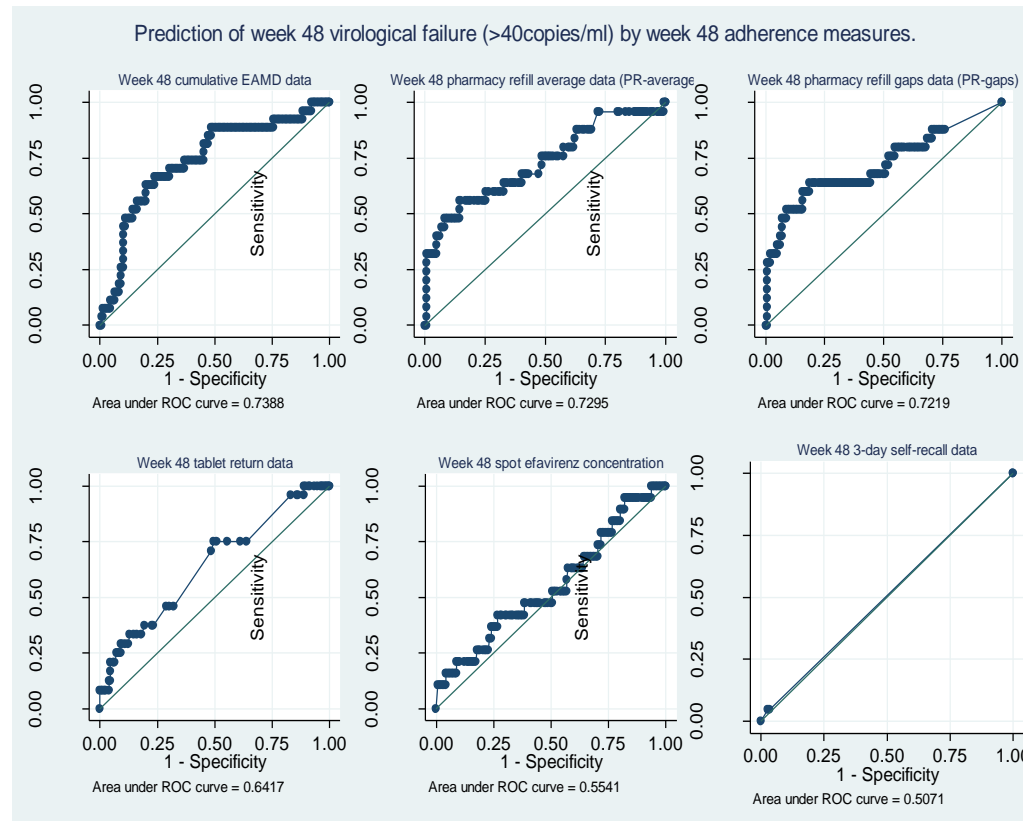
MEMs caps:
Retrospective
data

Wisepill:
Real-time data

Dosing as recorded using the Wisepill® electronic pillbox.



Adherence measures vs. failure...



- at week 48
- failure defined as >40 copies/ml.

Measure:	EAMD	PR-ave	PR-gap	TR	EFV	SR
AUC ROC:	0.74	0.73	0.72	0.64	0.55	0.51
95%CI:	0.63-0.84	0.61-0.85	0.59-0.85	0.52-0.76	0.40-0.70	0.46-0.56



Question 3

Which of the following interventions have been shown in randomised clinical trials to improve adherence to **ART**?



Question 3 - answers

- 1) Food parcels
- 2) DOTs
- 3) SMS reminders
- 4) Pre-treatment education
- 5) All of the above

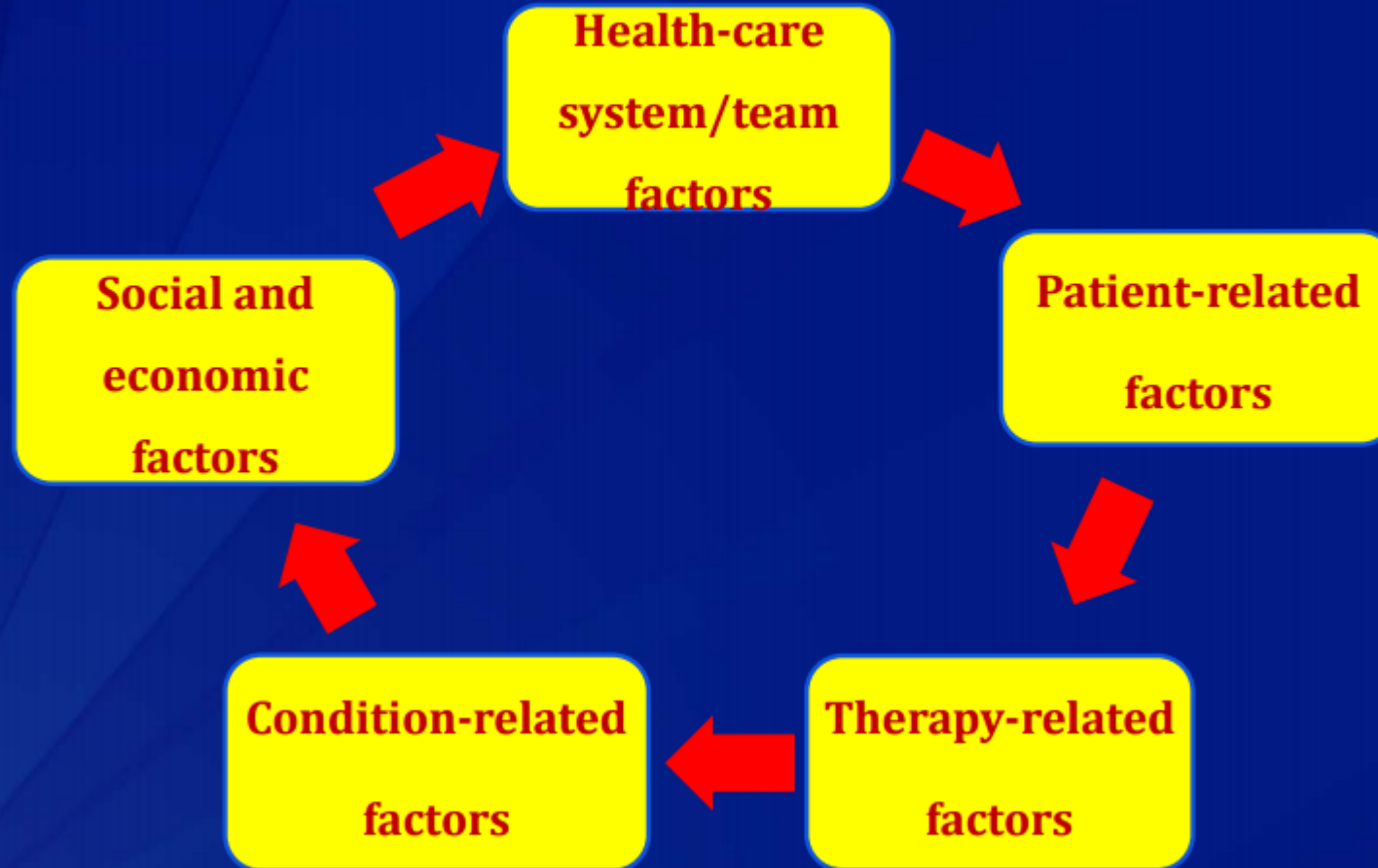


Then we need to support individual adherence – what works?

- Education / counselling methods
- Electronic intervention
- Healthcare system restructure
- Economic-based interventions



Five Interacting Dimensions of Non-Adherence



Source: <http://apps.who.int/iris/bitstream/10665/42682/1/9241545992.pdf>

Snipped from a CDC presentation on adherence in chronic disease.

Education / counselling methods:

Education:

An exchange of information to increase knowledge.

Treatment preparedness - a required minimum for starting ART; recommended in most ART guidelines.



Learning Knows No Bounds

Education / counselling methods:

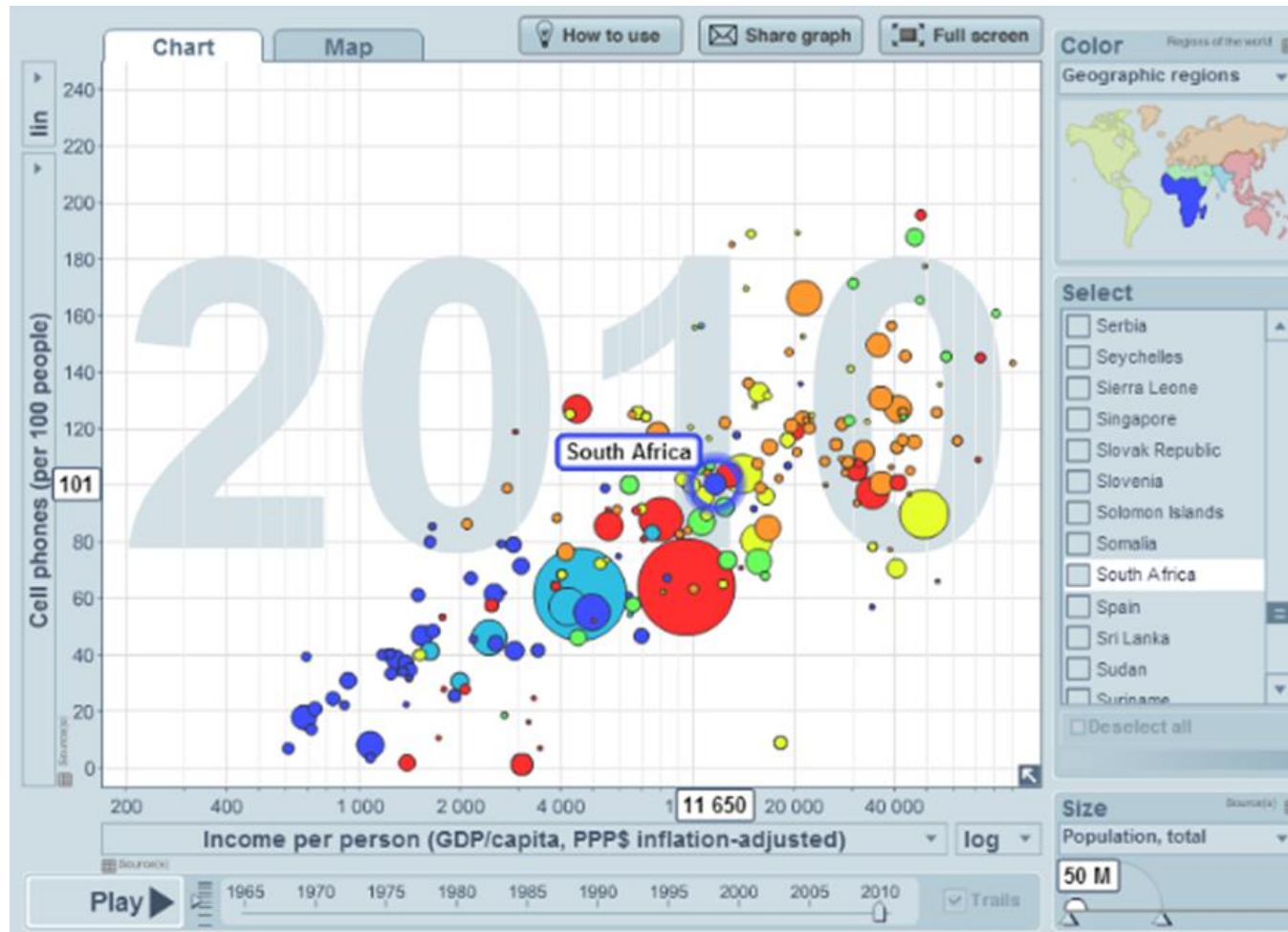
Counselling:

Beliefs, attitudes, feelings and skills related to ART adherence.

Counsellor or peer-nominated supporters can improve adherence, provide emotional support and promote healthy behaviours.



Electronic tools:



Electronic tools:

Mobile phone interventions –

Weekly, bi-weekly and initial daily text messages have all resulted in adherence improvement; as have voice calls.

- Connection with the clinic adds benefit.
- Creation of good habits.



Electronic tools:

Electronic Monitoring Devices (EMD) –

Monitor adherence in real-time,
so allow immediate intervention

To date:

- Increased cumulative adherence
- Reduced ART Rx interruptions
- Improved adherence to TB Rx



Electronic tools:

Caution –

Not all studies show improvement in biological markers.

Some good studies show no benefit of SMS reminders.



Healthcare system restructure:

Barriers:

- Extended travel to clinic
- Long waiting times
- Stock outages
- Negative interactions with staff

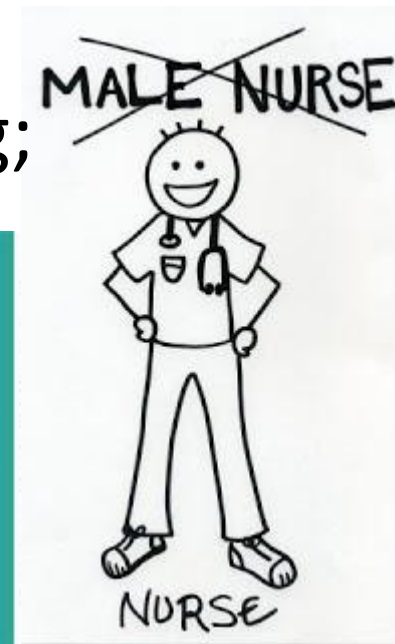


Healthcare system restructure:

Task-shifting –

Doctor to nurse (NIMART) – already used in South Africa...

Includes counselor to peer shifting; and clinic to community...



Healthcare system restructure:

Adherence clubs –

Alternate models of receiving ART - success with moving suppressed individuals into clinic-based and community clubs.

- Better retention
- Reduced clinic staff burden
- Reduced patient time / transport
- Social support



Healthcare system restructure:

e.g. South Africa: VL<40

- 30 people per club
- 5 times per year
- Less than 1 hour per visit



e.g. Mozambique:

- ~6 people in community groups
- 1 person represents the group at the clinic



Economic-based interventions

Cash incentives – in US conditional economic incentives have improved adherence.



Food parcels: worked with youth, and in resource-poor settings.



Question 4

Zomzi is a 28-year-old woman born in the Eastern Cape, who has been on ART at your clinic since 2009. Her mother is at home in the Eastern Cape, but is ill. Her children live there with her mother as well, while she does domestic work here.

She has interrupted her ART three times in the last 2 years, and has now returned after a fourth interruption in treatment. Her viral load is 33245 copies/ul.

How do you manage her?



Question 4 - answers

1. You tell her off for not looking after her health and send her back to her home to get her ART seriously.
2. You tell her to come back with her ART seriously.
3. You restart her ART and discuss her future travel plans with her.
4. You suggest she moves back to the Eastern Cape and seeks care there.

Think of:



- **Clubs...**
- **4 or 6 monthly dispensing options?**
- **ATMs for medicines.**



How do we apply this on a country level?

Differentiated care -

Different people have different needs; tailor resources to those who require them.



How do we apply this on a country level?

1. Assess adherence in all; intensify interventions for decreasing pool of individuals with reduced adherence.
PR – coarse, retrospective...
Electronic – identify adherence patterns, granular.



How do we apply this on a country level?

2. Allow people to choose an intervention up front, from a range of (exciting!) options



Conclusion...

- Adherence is crucial
- Can be altered – both directions
- We have to improve / streamline existing systems (use what you have) – people need to believe they are being cared for...
- All ideas are welcome!



Acknowledgments

Robin , Linda-Gail Bekker and Gary Maartens

Jessica Haberer and Gates Adherence Experts Forum

Cathy Kalombo and HCTC clinic team...

David Bangsberg, Carole Wallis, Gert van Zyl, Lloyd Marshall

Katya Mauff, Andrzej Bienczak, Rory Leisegang, Paolo Denti

Gareth Bowers and Carl Morrow

The amazing TAP study team: Heidi, Alienah, Nomsa, Speech and Dima; and the 230 people who participated in the TAP study

