This might sound crazy but.....
Thinking outside the box in ART adherence

Dr Tom Boyles
Department of Infectious Diseases and HIV Medicine, UCT
Fig 2  Kaplan-Meier plot for survival in patients defined as adherent or not adherent (<95% or ≥95% adherence).

Kboneka A et al. BMJ 2009;338:bmj.b201

No of patients at risk:

<table>
<thead>
<tr>
<th>Adherence &lt;95%</th>
<th>118</th>
<th>106</th>
<th>100</th>
<th>91</th>
<th>84</th>
<th>82</th>
<th>65</th>
<th>34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence ≥95%</td>
<td>1403</td>
<td>1266</td>
<td>1056</td>
<td>764</td>
<td>415</td>
<td>389</td>
<td>290</td>
<td>144</td>
</tr>
</tbody>
</table>

Log rank P value: <0.01
Fig. 2. Viral suppression after 12 months of antiretroviral therapy in low- and middle-income countries

Error bars indicate 95% confidence intervals.

James H McMahon, a Julian H Elliott, a Silvia Bertagnolio, b Rachel Kubiak c & Michael R Jordan c
WHO’s Five Dimensions of Adherence

- Social & Economic
- Health Care System
- Condition Related
- Therapy Related
- Patient Related
THINKING INSIDE THE BOX
Conclusions: Text-messaging can support antiretroviral therapy adherence. Researchers should consider the adoption of less frequent messaging interventions with content and timing that is individually tailored and designed to evoke a reply from the recipient. Future research is needed in order to determine how best to optimize efficacy.
it's the economy, stupid
200,000,000

TWO HUNDRED MILLION RAND

SOUTH AFRICAN RESERVE BANK

AB9311442 E
Effects of Ecuador’s national monetary incentive program on adherence to treatment for drug-resistant tuberculosis

A. Sripad,* J. Castedo,* N. Danford,† R. Zaha,‡ C. Freile‡

*Geisel School of Medicine at Dartmouth, Hanover, New Hampshire, †The Dartmouth Center for Health Care Delivery Science, Hanover, New Hampshire, USA; ‡National Tuberculosis Program of Ecuador, Quito, Ecuador

Figure  Time to default from MDR-TB treatment, 2010–2012, Ecuador. 1-year default rates: pre-program = 26.7%; program = 9.5%. MDR-TB = multidrug-resistant tuberculosis.
Financial reinforcers for improving medication adherence: Findings from a meta-analysis

Nancy M. Petry, Ph.D., Carla J. Rash, Ph.D., Shannon Byrne, Ph.D., Shehryar Ashraf, M.D., and William B. White, M.D.
Calhoun Cardiology Center, University of Connecticut School of Medicine, Farmington
Adherence aids
10 x 1 ml ampoules

Clopixol® Depot
Injection 200 mg/ml
Zuclopenthixol decanoate
For deep intramuscular injection only

Manufactured in Denmark by:
H. Lundbeck A/S - Copenhagen
Long-acting injectable nanoformulations
Cohort B (minitab sprinkle vs syrup in children 1 to <4 years)

GM (95% CI) LPV plasma concentration (mg/L)

Time after LPV/r intake (hours)
'Remote control' contraceptive chip
X out TB: Monitoring Patient Compliance with Tuberculosis Treatment Regimens
THINK OUTSIDE THE BOX
D4T, 3TC, NVP

Toothpaste!
Depression and HIV/AIDS Treatment Nonadherence: A Review and Meta-analysis

Jeffrey S. Gonzalez, PhD*,†,‡, Abigail W. Batchelder, MPH, MA*, Christina Psaros, PhD‡,§, and Steven A. Safren, PhD‡,§

35,029 participants
r = 0 • 19
Low-resource settings
Fixed Dose Combination ARV

3 ARV pills in 1. Taken once a day.
Fixed Dose Combination ARV and antidepressant

4 × ARV pills in 1. Taken once a day.
addiction
HISTORICAL
- Previous History
- Expectation
- Learning

DRUGS

BIOLOGICAL
- Genetics
- Circadian Rhythms
- Disease States
- Gender

BRAIN MECHANISMS

ENVIRONMENT
- Social Interactions
- Family
- Stress
- Conditioned Stimuli

ADDICTION
ADHERENCE

DRUGS

HISTORICAL
• Previous History
• Expectation
• Learning

BIOLGICAL
• Genetics
• Circadian Rhythms
• Disease Stages
• Gender

BRAIN MECHANISMS

ENVIRONMENT
• Social Interactions
• Family
• Stress
• Conditioned Stimuli
Fixed Dose Combination ARV

and addictive drug

4 × ARV pills in 1. Taken once a day.
Characteristics of drug

• Cheap
• Induces stable addiction (24hrs)
• Limited euphoric state
• Minimal drug interactions
• Minimal side effects
• Limited street value
• Not easily obtainable elsewhere
• Single preparation available
Candidate compounds

• Opiates?
  – Buprenorphine
  – Oxycodone
  – Oxymorphone

• Stimulants?

• Relaxants?
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www.tacgivengain.org
THINK OUTSIDE THE BOX