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Positive Prevention Counseling and Antiretroviral Adherence Messages in an African Setting: A Time Motion Study

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Clinical Systems - Problem

- Adherence to ART is key for survival, extending regimens, is a dynamic behavior

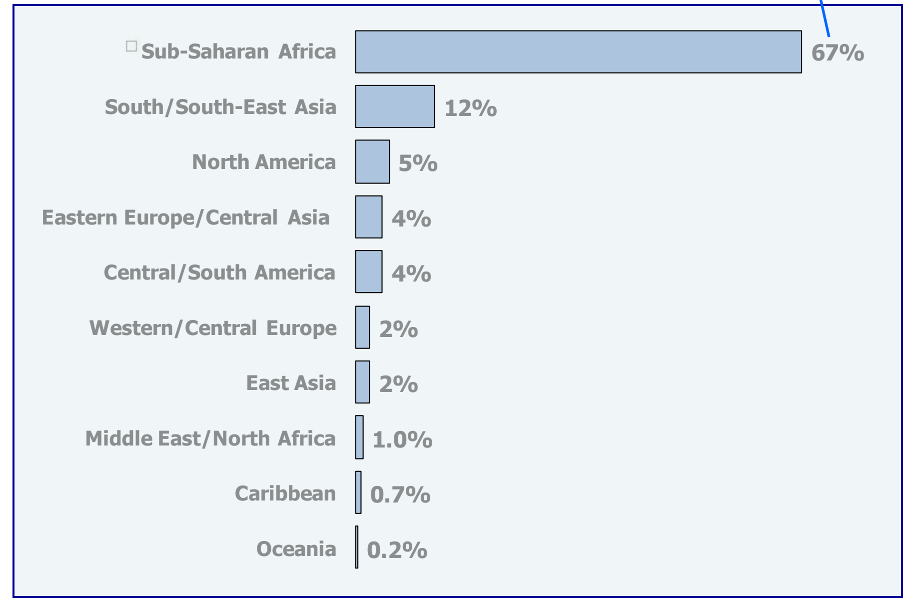
- Secondary transmission “positive prevention” support needed, yet not always delivered

- Huge numbers of HIV+ patients need counseling, limited staff to deliver this over time
  - Increased need due to earlier ART thresholds

Global HIV Disparities

97% of people w/ HIV live in low-income countries
(KFF, 2011)

12% of world population



Sub-Saharan Africa
Two-thirds of all people in the world with HIV/AIDS live here.

BOTSWANA
Highest infection rate: 22%

Each square represents 10,000 people living with HIV/AIDS in 2003.

Country where 10% or more of population lives with HIV/AIDS

SOURCE: UNAIDS
NG MAPS

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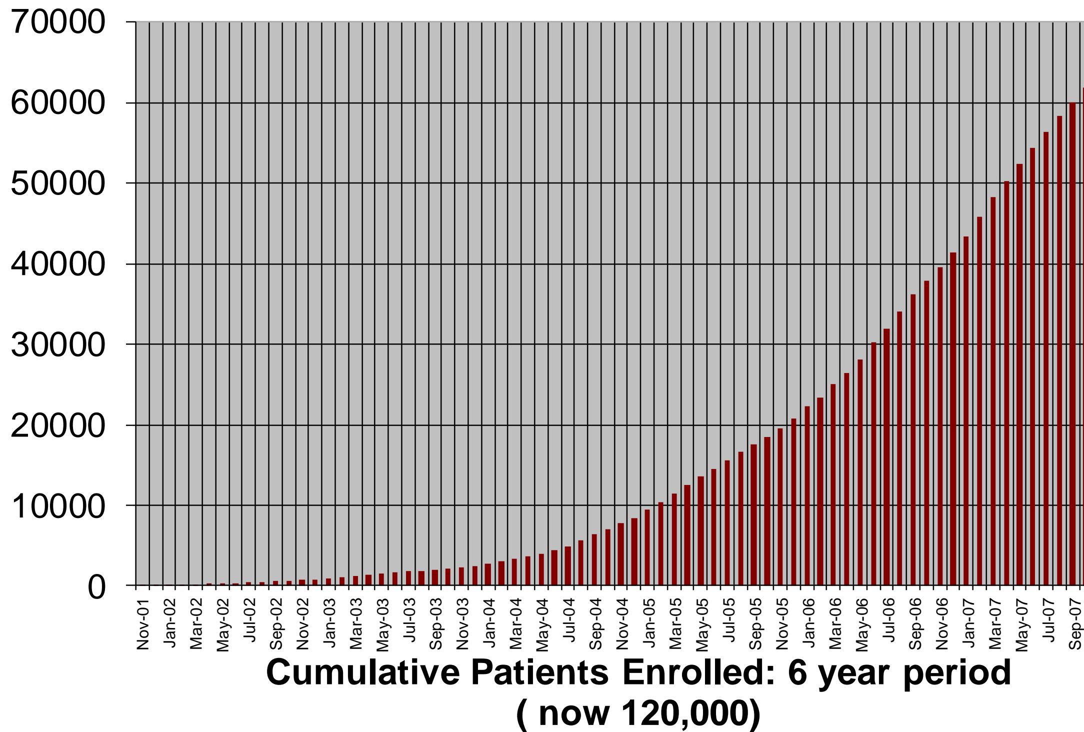
Large Numbers in Need



For every 1 put on ART, 2 new infections (2011)

But Not Enough Providers…

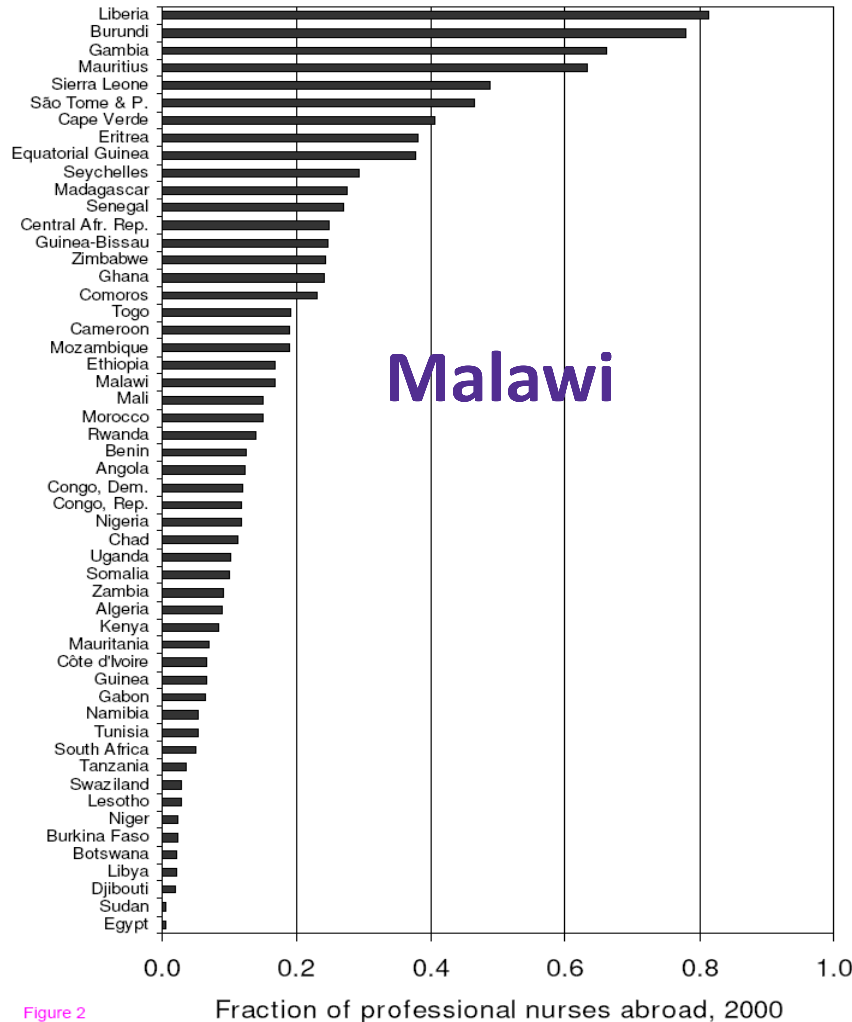
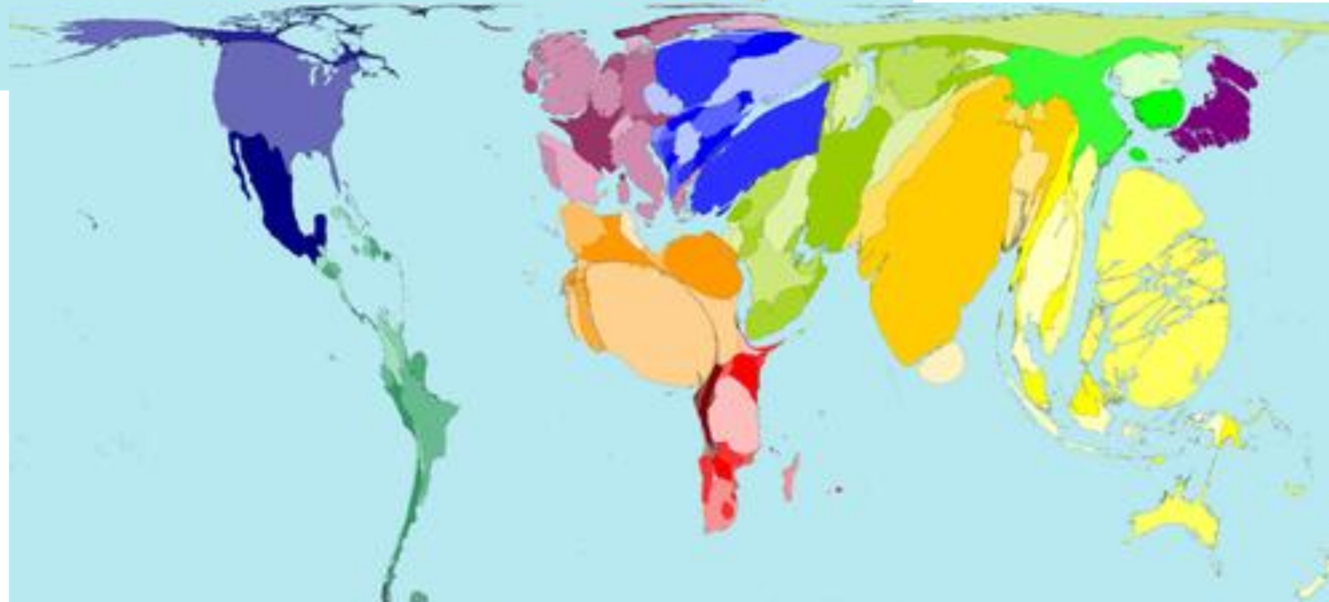


Figure 2

1/5 MDs, 1/10 nurses African-born are working abroad (Clemens '08)

Malawi ART to all would take 16% all nurses, 354% all pharmacists, 56% all MDs (Muula '07)

Proportional Global Distribution, Nurses & Midwives



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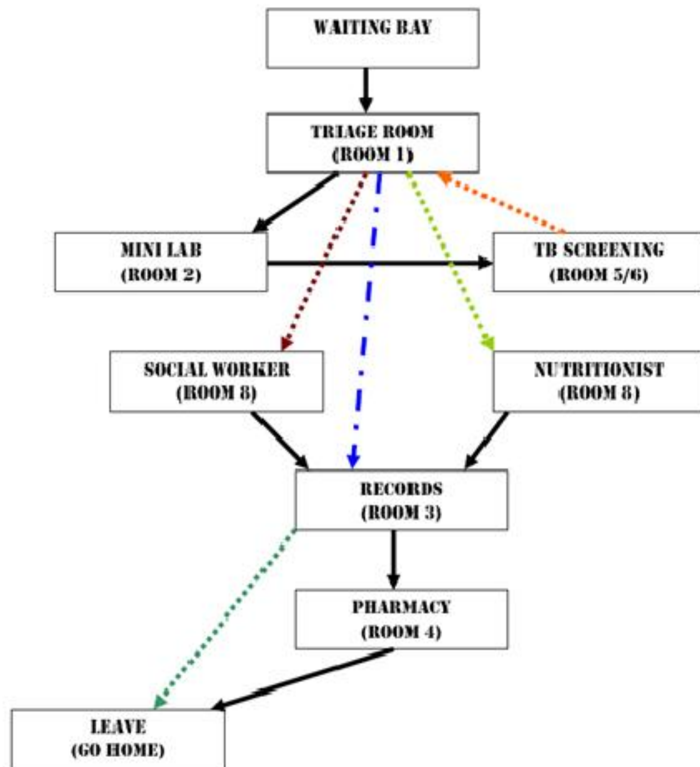
Health System Constraints, LMICs

- Sub-Saharan Africa 67% of global HIV, 3% of health providers, <1% health expenditures
- Interventions to support positive prevention and antiretroviral therapy (ART) adherence must be scalable at low cost and staff-use
- Helpful to understand current provider practices around counseling
  - Amount of time
  - Content/focus
  - Possible adjuncts/alternatives

Understanding Clinic Flow/Efficiencies

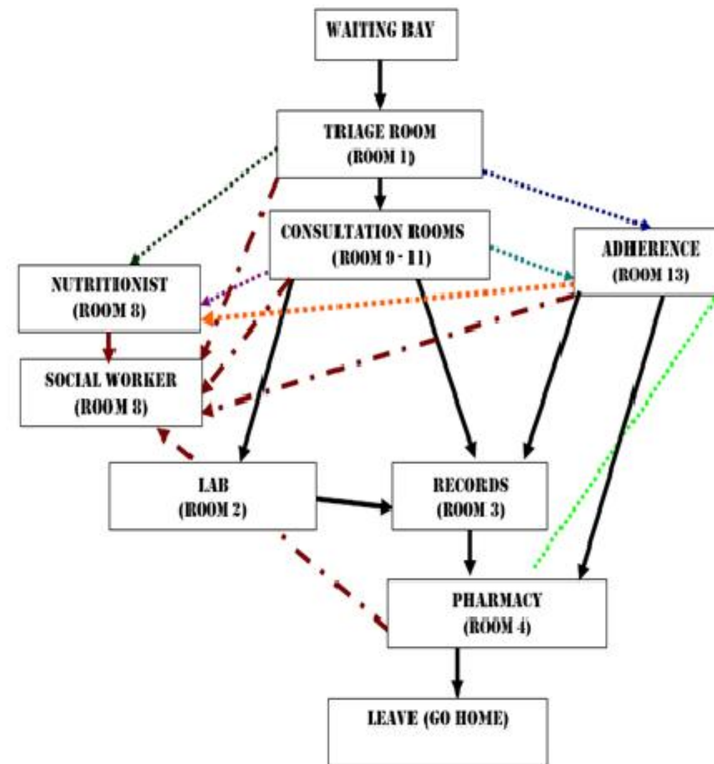
- Few studies document HIV-clinic patient experiences and flow in resource-limited settings
  - Zambia wait times increased 32-36% once HIV & outpatient primary care became integrated (Zeo '12; Topp '10)
  - Uganda 2 physician-led, 1 nurse-led HIV clinic 183-274 minutes spent waiting (Wanyenze '10)
  - Uganda length of patient visit reduced by 11.5 minutes after EHR clinical summary introduced (Were '10)
  - Uganda 2 clinics mean visit 77 & 196 minutes, with 66% & 62% of time spent waiting (Were '08)
- A number of studies have looked at using waiting for patient education but few done in developing countries

HIV Clinic Flow Example, Thika Kenya



KEY

- Referred to Social worker from Triage room
- Referred to Nutritionist from triage room
- To the Triage room for Counseling on behavior change
- To the records room for next appointment
- Patient goes home



KEY:

- Referred to Nutritionist from Triage
- Referred to Nutritionist from Consultation room
- Referred to Adherence from Triage
- Referred to Adherence from Consultation room
- Referred to Nutritionist from Adherence
- Referred to Adherence from Pharmacy
- Referred to Social Worker

Inwani et al.,
IAS 7/2012

Study Setting - AMPATH

UGANDA
Great Rift Valley
Kapenguria 9
Kitale 10
Mt. Elgon 12
Cheptais 17
Naitiri 7
Teso 11
Webuye 6
Turbo 3
Iten 13
Kabarnet 14
Marigat 16
Amukura 8
Busia 15
1 Eldoret
Mosoriot 2
4 Burnt Forest
Khunyangu 19
Chulaimbo 5
Port Victoria 15
Kisumu
Lake Victoria
ETHIOPIA
SOMALIA
KENYA
TANZANIA
Indian Ocean
Nairobi
Mombasa

http://www.ampathkenya.org/

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Study Setting - AMPATH

- >60 clinics, 140,000 cumulative HIV pts
- Innovative use of information, communication & technology (ICT) tools
  - EHR (OpenMRS)
  - Home-based testing, pt card w/ barcode
  - PDAs by peers to assess pt wellness/refills/visit periodicity
  - Cell phone reminders
- Shift to primary care delivery

Time-Motion Baseline

- Goal to identify:
  - Types of messages given to patients during return visits
  - Amount of time spent on counseling and by which providers
  - Unmet counseling needs
  - Possible times during visits where other forms of counseling (not dependent on a clinician) could be delivered

- Establish baseline prior to randomized controlled trial (RCT) of a computerized counseling intervention
  - Urban clinic ~6,800 HIV pts (full-time 2 MDs, 5 COs, 4 RNs)
  - Rural clinic serving ~2,700 pts (full-time 0 MDs, 3 COs, 1 RN)

Data Collected

- Registration/**Nurse/CO-MO-MD/Pharmacy/Psychosocial**/Other

Assessment	Messages	Support
ART Adherence	ART Adherence	Acknowledge success
Transmission Rsk Behavior	ABC	Resource advice
Meds (incl herbal/trad)	Meds (incl herbal/trad)	Referral made
Alcohol & Drug Use	Alcohol & Drug Use	
Health Promo	Plan	
Correct Misinformation		
Disclosure	Disclosure	
	Family planning	

Time Motion Data Capture

Methods

- Patients contacted by trained research assistants (RAs) when entering clinic
  - Only those who consented were included
  - Refusers asked to complete brief survey
- Collected patient age, gender, languages spoken, monthly income, travel time to clinic
- RAs used PDAs (HanDBase® software) to record activities including all counseling messages received during visit, and duration of messages
- Unit of analysis was clinic visit, recorded from patient registration to time s/he left clinic

Results

- Observations for 96 rural-clinic patients and 94 urban-clinic patients totaled 194 hours
- Mean visit length at rural was 44.5 (SD=27.9) minutes and at urban 78.2 (SD=42.1) minutes
- Demo matched clinics: 61 F, 25 M; ages 23-60 yrs Rural
62 F, 36 M; ages 24-70 yrs Urban
- Wait time average 29.1 (Rural) and 61.3 (Urban) minutes
- 174 (92%) patients were <u>asked</u> about pill-taking behaviors (no difference by clinic) and 57 (30%) about transmission risk behavior (more time at rural clinic)

Results

- Patient messages given:
  - ART adherence (n=188, 99%)
  - Positive prevention messages (n=129, 68%)
  - Disclosure (n=121, 64%)
  - Contraception/pregnancy (n=95, 50%)
  - Alcohol and drug use (n=62, 33%)
- Staff-delivered positive-prevention messages (ABC) averaged 17 (rural) and 39 seconds (urban), comprising ~ 1% of total visit time spent
- Wait times were significantly longer at urban clinic, but both had potential time for alternative counseling delivery (29.1 minutes at rural, 61.3 minutes at urban)

Mean time spent counseling

	Rural Clinic Minutes* (% of visit)	Urban Clinic Minutes* (% of visit)	Rural vs. Urban Time
Category	All n=96	All N=94	p-value[§]
Alcohol & Drug Use	0.92 (2.6%)	0.84 (0.16%)	0.0011
ART Adherence	1.2 (3.4%)	1.9 (2.8%)	0.0003
Contraception & Pregnancy	0.20 (0.57%)	0.5 (0.71%)	0.0012
Disclosure	0.75 (2.1%)	0.45 (0.81%)	0.8069
Positive Prevention Messages	0.29 (0.87%)	0.65 (1.1%)	<0.0001
Other Counseling	0.19 (0.51%)	0.75 (0.80%)	0.1860
Health Promotion Plan	0.47 (1.4%)	0.47 (0.69%)	0.8079
**Patient Other Time with Provider	10.5 (27.5%)	11.3 (15.9%)	0.51
Waiting	29.1 (58.4%)	61.3 (75.8%)	<0.0001
Questioned on Adherence	0.59 (1.9%)	0.7 (1.1%)	0.4411
Questioned on Risky Behavior	0.23 (0.69%)	0.11 (0.13%)	0.0073
Total Visit Time	44.5	78.2	<0.0001

Discussion

- In this relatively efficient system, levels of counseling may be relatively high
  - Difficult to compare to other venues as few published data
  - Magoma 2011 Tanzania found insufficient msgs re ANC
- However, necessarily still limited time spent on key behaviors of ART adherence and safer sex
- Significant client wait time that could be used more effectively for education, alternative counseling delivery

Moving Forward

- Undertook cultural contextualization of a US-developed computerized counseling tool
  - Focus groups and interviews
  - Expert Advisory Group

- RCT (n= 225) of computerized counseling tool in Kiswahili and English now underway in these two clinics

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