



# Incorporation of model-based quantitative estimation techniques into government policymaking for HIV care and treatment

Translating Experience and Operations Research into Policy Change  
Consortium for Strategic HIV Operations Research (CSHOR)

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# CSHOR overview

- CSHOR identifies barriers to delivery of high-quality care in resource-limited settings, and develops tools and analyses that help governments address the barriers and optimize resources
- CSHOR work is data-driven and utilizes operations research and analytical methods
- The team initially focused on HIV treatment delivery; activities have since expanded to include HIV prevention, malaria and TB

# Problem

- Lack of adequate human resources is a barrier to scaling up HIV care and treatment in Ethiopia
- Task-shifting is one of several solutions being explored while recruitment is increased
  - Maximizing current human resources by shifting some tasks to lower-level health care workers (HCWs)
    - Training nurses to prescribe and dispense medication
    - Training lay HCWs to measure vital signs, draw blood, or provide counseling and education
- Techniques to estimate the impact of such changes are needed

# Collaboration

WHO launched a global effort to address the shortage of health workers:  
“Treat, Train, Retain (TTR)”

Ethiopia, as part of the Joint WHO/UNAIDS/PEPFAR Collaboration on  
“Task-shifting”, has convened a national TTR-Technical Working  
Group

CSHOR is assisting the MoH (HAPCO) in Ethiopia with quantification of  
the impact of task-shifting

- Observing HIV clinics to measure the time HCWs spend on patient visits
- Modeling the impact of task-shifting on HR demand and patient capacity

# Results: Time-motion

Patient type: Adult ART follow-up, average time (min:sec)

	Physical Exam	Medication Counseling	Patient Disturbance	Patient Triage	Registration	Total
<b>Adherence Nurse</b>	0	22:37	0	0:37	0	23:14
<b>Data Clerk</b>	0	0	0	0	1:14	1:14
<b>Nurse Specialist</b>	5:17	4:33	1:05	0	0	10:55
<b>Pharmacist</b>	0	0	0	0:54	0	0:54
<b>Physician</b>	4:47	0	1:28	0	0	6:15
<b>Total</b>	10:04	27:10	2:33	1:31	1:14	42:32

# HR Estimation Tool

## CSHOR's Human Resource Analysis Tool (HRAT)-Excel-based

- Inputs
  - Patients currently enrolled in the clinic
  - Future enrollment
  - Attrition
  - Proportion of patients on ART and in care
  - Visit schedules for each type of patient
  - Time spent with patients by different health worker cadres by visit type
  - Total hours spent with patients each day

# Adjustments modeled

- Adherence and medication counseling are shifted from nurse to counselor (a newly created cadre)
- Involuntary idleness and patient disturbances are decreased by adding expert patients to direct patient flow
- 60% of ART follow-up patients are seen by nurses instead of 45% in the base case

# Model configuration

## Base case

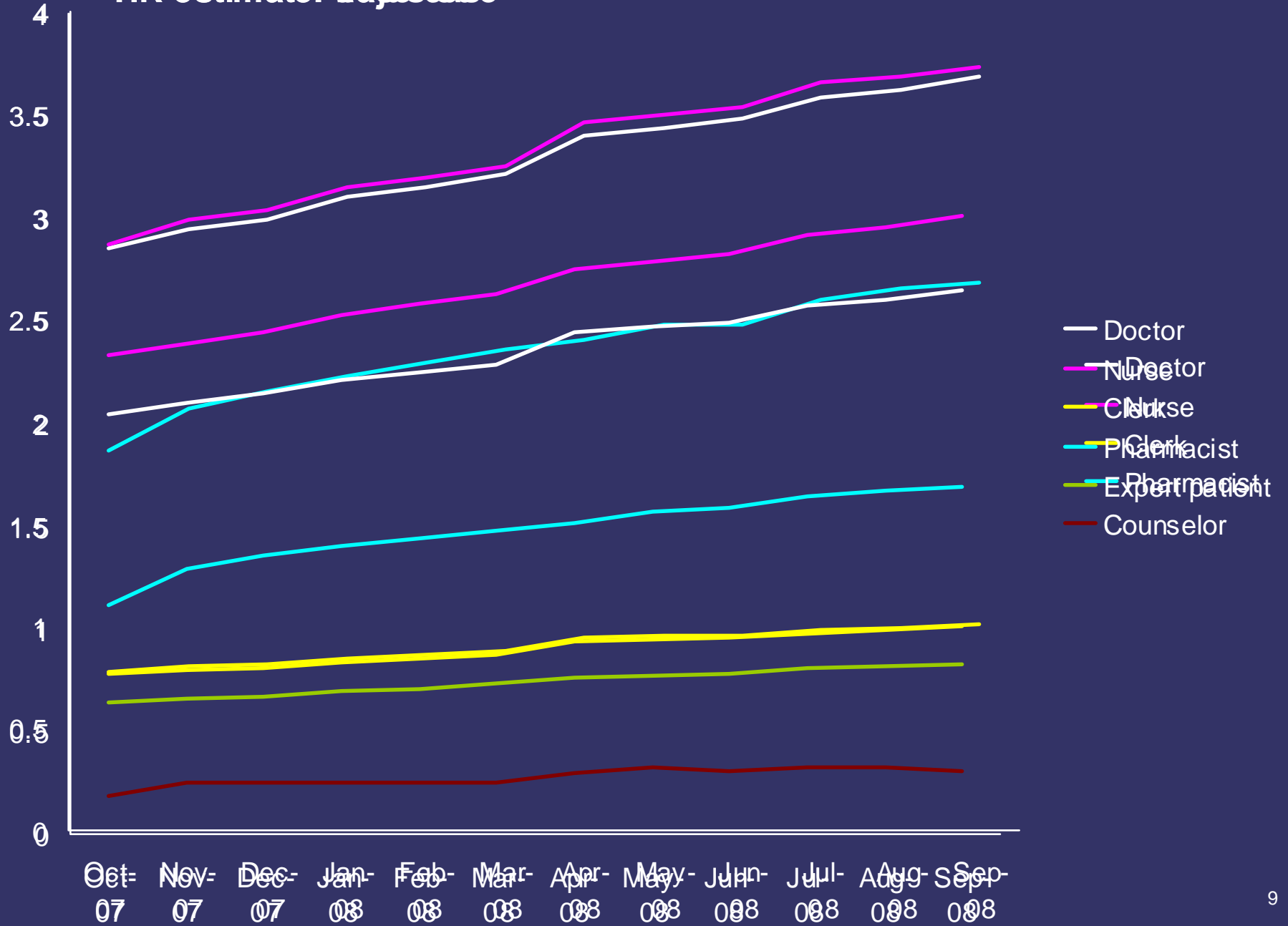
HR Visit Times							
Cadre	Time in Minutes					% ART visits complicated	Hours with pts / day
	Initial	Non-ART Follow-Up	ART Initiation	ART Follow-Up	ART Complication		
Doctor	12	4.5	8	0	7	55%	5
Nurse	8.5	5	24	7.5	0	55%	5
Counselor							
Clerk	7	1	1	1	1	55%	5
Pharmacist		0	18	5	5	55%	5
Expert patient							

## Adjusted case

HR Visit Times							
Cadre	Time in Minutes					% ART visits complicated	Hours with pts / day
	Initial	Non-ART Follow-Up	ART Initiation	ART Follow-Up	ART Complication		
Doctor	11	3.5	7	0	6	40%	5
Nurse	7	3.5	0	6	0	40%	5
Counselor			20				5
Clerk	7	1	1	1	1	40%	5
Pharmacist		0	18	3	3	40%	5
Expert patient	1	1	1	1	1	40%	5



# HR estimate: budget case



# Conclusions

As governments strive to scale-up HIV care and treatment in the face of limited human resources, task-shifting is a viable approach for maximizing existing resources

Quantitative tools provide decision-makers with data to drive planning and choose among different options

CSHOR is working with HAPCO to scale-up these time-motion and quantification activities to more clinics in Ethiopia

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