

The Cost and Impact of Giving Transportation Subsidies and Cash or In-kind Support to Antiretroviral Patients in Haiti: A Retrospective Cohort Study

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Haiti's ART Program

- Over 50,000 people actively on anti-retroviral therapy (ART) in 2011
 - About 50% of people estimated to need ART
- Multiple NGO actors
- Large amounts of support from PEPFAR and the Global Fund
 - Potential for constraint

We Are Investigating Longer-term Retention in Care

- What is the association between [intervention] and missed visits after the first year of ART?
- What is the association between [intervention] and retention rates after the first year of ART?
- Costs

Interventions and Outcomes

- Interventions:**
 - Transportation subsidy
 - Any in-kind or cash payment (including transport). Periodicity and amount of interventions vary by NGO and availability of funds
 - Measured during first year of ART
- Missed visit** = non-attendance at a facility for more than 14 days after patient's ARV supply exhausted
- Failure of retention** = death or absence from facility for more than 3 months.

Conceptual Framework

- Transportation (or other cash/in-kind) subsidies may:
 - Influence ability of patients to access care...
 - ...Reduce number of missed visits/increase compliance and adherence...
 - ... which may result in better treatment outcomes
 - Subsidies may influence a patient's economic status (income effect)...
 - ...May directly affect treatment outcomes

Data

- T11 ART delivery sites
 - 5 different US Government supported NGOs
 - Large (>300 patients) and small sites; urban/rural
 - Over 11,000 ART patients in December 2010
- Randomly selected ART patients from each site
 - Patients started ART between January 1, 2006 and January 1, 2009
 - Study period = January 1, 2007 - December 31, 2009 (1 month before earthquake)
 - Exclude patients under 15 years of age, transferred into a site, patients with less than 1 year ART

Sample Characteristics

- 499 patients (range: 12 to 181 per site)
- Average follow-up period (from end of first year of ART): 261 days
- 31 treatment failures (18 deaths)
- 29% received transportation subsidies in first year of ART
- 42% received any kind of cash or in-kind support (including transportation reimbursement, nutritional support, cash transfers, etc.)

Baseline Characteristics of Sample

- Patients that received interventions in 1st year of ART (prior to analysis period):
 - Higher CD4 counts at initiation of ART
 - Received fewer non-ART drugs/non-CD4 labs (in first year of ART)
 - Older (a bit)
 - Less likely to change ARV regimen in first year
 - More likely to be missing baseline data
- ...than patients that did not receive intervention in first year

Results 1: Interventions and Missed Visits (Poisson Regression)

- No statistically significant relationship between transportation reimbursement & any cash/in-kind support and missed visits after first year in multivariate regression
 - Unadjusted association between any cash/in-kind support and missed visits
- Missed visits in first year associated higher treatment failure in some models ($p < 0.05$)

Results 2: Interventions and Treatment Outcomes (Cox Proportional Hazard)

- Association between greater number of visits in first year in which transportation reimbursement was received and lower treatment failure rate ($p < 0.05$ in all models)
 - Hazard ratio around 0.01 across models
- Association between receipt of any cash/in-kind support in year one and lower treatment failure rate ($p < 0.05$ in all models)
 - Hazard ratio around 0.20 across models
- Association remains when controlling for missed visits in year 1.

Costs

- Transportation reimbursements average \$17 per person per year in first year of ART (among those receiving)
- Any cash/in-kind support average \$34 per person per year in first year of ART (among those receiving)
- In regression:
 - Any cash/in-kind support associated with cost per person year about 8% to 15% higher than those without any support ($p < 0.01$)
 - Transportation reimbursement not statistically significant, and in some cases negative costs (e.g., associated with lower costs elsewhere)

Findings Support Giving Transportation Subsidies in Some Settings

- Reimbursing transportation costs to patients with ART in first year of care is associated with lower rates of treatment failure but not a lower number of missed visits
 - Direct cost is about \$20 per person-year but may result in lower costs elsewhere
- Any cash/in-kind support to patients with ART in first year of care is associated with lower rates of treatment failure, but possibly lower effect than transportation reimbursement
 - Direct cost is about \$35 per person-year
 - That is, about 100 patients receiving cash / in-kind support = cost of 10 person-year of ART for a non-supported person, but could prevent up to 6 treatment failures
- All need more study
 - Little statistical power
 - Possibility of selection bias is very strong