Measuring the Effects of Prime-Age Mortality on Rural Households: Kenya, Mozambique, Rwanda, and Zambia


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AEPS Workshop, Johannesburg, South Africa
September 22, 2003

Current Understanding of HIV/AIDS’ Effects on Rural Households

- Macro-level studies: highly variable findings
  - Sachs: 35% decline in GDPs in highly infected countries
  - Others: less than ½% decline in annual GDP growth
- Growing number of studies in AIDS “hot spots”
  - not representative
- Little attention to counterfactuals
- Empirical understanding of how rural hhs respond to AIDS remains very weak
Objectives

1. To Measure the response of households to prime-age mortality, using nationally representative household survey data
2. To determine the strategies used by households to respond to illness/death
3. To identify implications for design of agricultural programs and policies

Methods

• Based on ongoing surveys, add demographic and mortality component
• Ask hhs about individuals who died over past 2-3 years, time, symptoms, illness, etc.
  – Control group
  – Afflicted group
• Using cross-sectional data, longitudinal data where possible
• Undertaken with agricultural sector funding
Countries studied

- Zambia (2001)
- Mozambique (2002)

Adult Mortality Rates – Women
expected (based on HIV- rates) vs. actual
Adult Mortality Rates – Men
expected (based on HIV- rates) vs. actual

- Strong correlation between provinces of high adult mortality and HIV-prevalence rates from sentinel site surveys

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Finding 1: Important Gender Differences in Prevalence of Adult Death (Kenya case)

- Afflicted Men
  - Tend to initially have higher incomes / education prior to death
  - About half were household heads
  - In Moz, Rw, Zm, we don’t know initial conditions of hhs.
- Afflicted Women
  - Not correlated with income
  - Likely to be daughters in households
- However, many NGOs target low-income people (e.g., ag. wage laborers)
- IMPLICATION: Education Targeted to High-Income, High-Status Men

Finding 2: Effects More Severe on the Poor (Kenya)

- Very few significant effects detected for relatively wealthy households
- Effects on ag production and non-farm income were larger and more highly significant among the poor
Finding 3: Effect on Household Composition Depends on Who Dies (Kenya)

• Head-of-household death → - 1.5 members
  – Major loss in adult labor, mostly older hh members leave
• Female head/spouse death → - 2.1 members
  – Young boys and girls leave the household
• Death of other adults → hh often gained new adult member; these hhs are less adversely affected

Finding 4: Gender Effects of Mortality on Crop Cultivation (Kenya)

• Death of male head → - 0.9 acre to cash crops (e.g., sugarcane) (Kenya)
• Death of female head → - 1.8 acre to cereals, tubers (Kenya)
• Noticed shift to sweet potato, a crop that distributes labor more evenly (Rwanda)
Finding 5: Effects of Death on Farm Production Sensitive to Gender, Position in HH (Kenya)

- Death of Male hh-head → 68% reduction in value of crop output
- Death of Female head/spouse → less dramatic but still negative effects
- Why Effects of Male Prime Age Mortality are Greater?
  - Loss of female ag. labor to caregiving
  - Loss of higher-return crops
- Death of other hh member – insignificant effects on ag.

Finding 6: Strategies Adopted by Households After Mortality

- When male dies
  - Rely on neighbors / social networks (Rwanda, Moz)
- When female dies
  - Bring in hh members from off-farm (Rwanda)
  - Spend savings (Mozambique)
  - Cultivate less land, reduce weeding (Rwanda, Moz)
Finding 6: continued

- Response to Long Illness:
  - Sell assets, hire labor (Moz)
  - Rely on neighbors (Rwanda)
  - Spend savings (Moz)
  - Reduce land cultivated (Moz, Rwanda)
  - Reduce weeding labor (Moz, Rwanda)
- In case of female illness
  - Send children to relatives (Moz, Rwanda)
  - Take children out of school (Moz, Rwanda)

Finding 7: Loss of Off-Farm Income (Kenya)

- Effects not significant among households in the upper half of wealth distribution
- Among households in bottom half:
  - Death of Female Head/Spouse: not significant
  - Death of Male Head: -$642/year
Finding 8: Little Indication that Households are Able to Recover Quickly (Kenya)

- Economic shock for poor afflicted hhs is equally severe regardless of when male and female head mortality occurred between 1997 and 2000.

Summary

- Adult mortality’s greatest effects (Kenya) are:
  - On the relatively poor
  - When male head dies
  - When death is other than the hh head/spouse, the household is better able to draw back another household member to help the hh adjust

- Areas of high prime-age adult mortality coincide with areas of high HIV+ prevalence (Kenya, Moz, Zambia)
Implications

• Need Special Targeting Assistance to Widows in Poor Households
• Institutional adaptation (e.g., widow inheritance) -- not necessarily adapting in beneficial ways
• Targeting strategies aimed at widows may reduce economic need risky behaviors
  – e.g. Land tenure security for widows
  – Crop husbandry / management for women, e.g., how to liaise with outgrower companies
  – Working with/reinforce social networks, since widows tend to rely on those

Implications - 2

• Focus on Labor-Saving Ag. Tech?
  – Adult Mortality also depletes capital and land
  – Most afflicted households (Rwanda, Moz) were not making use of labor saving technologies or crops
  – Many afflicted households still have very high labor/land ratios
  – Prioritizing labor saving tech may forego potential productivity gains
  – Is the “cassava response” due to AIDS?
Resources are limited, so:

• What is Appropriate Balance Between:
  – Investing in Long-Term Productivity (e.g. education, ag. technology, market infrastructure)
  vs.
  – Investing in Targeting assistance to AIDS-affected households and communities
• Synergies?

Outreach working papers

• Working papers and presentations/discussions already held in Kenya, Rwanda; forthcoming in Zambia and Mozambique
• CDs with the stand-alone versions of the websites will be distributed at poster session of this workshop.