

# Measuring the Effects of Prime-Age Adult Mortality on Rural Households in Kenya

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March 27, 2003

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## Current Understanding of HIV/AIDS' Effects on Rural Households

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- Micro-level foundation
  - Remains very weak
- Macro-level studies
  - only as accurate as their underlying assumptions about household behavioral responses

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# Objectives

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1. To Estimate Impact of Adult Death on:
  - Household Composition
  - Agricultural Production
  - Non-farm income
  - Assets
2. To identify implications for program design

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# Data - I

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- Two-year panel (1997 and 2000)
  - 22 districts (excluded pastoral areas)
  - 1,422 / 1,500 households revisited
  - attrition rate: 5.2%
  - Kisesa study (Urassa et al) found 42% of households “dissolved” within one year after death of male head-of-hh
- Qualitative follow-up survey on households experiencing adult mortality in two districts

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## Data - II

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- 9,177 individuals in 1997
  - Of these, 6,856 were still residing at their household in 2000
  - 145 passed away (1.6%)
- 2,357 new members between 1997→2000
  - 55 passed away (2.3%)

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## Data - III

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- 200 cases of mortality
  - 160 > age 15
  - 9 accidents/violence
- 151 disease-related deaths
  - 76 were in “prime-age” range
    - 15-49 years for women
    - 20-54 years for men

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# “Difference-in-Difference” Approach

	1997	2000	Difference
Households not afflicted	$x_1$	$x_2$	$)x$
Afflicted households	$y_1$	$y_2$	$)y$
difference			$)y - )x$

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## Estimation Model

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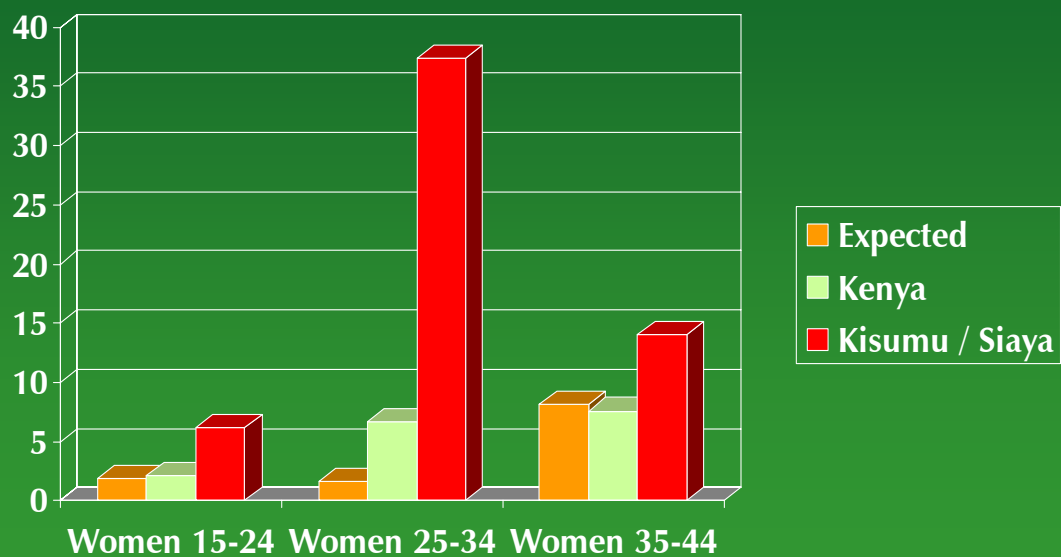
$$) Y_i = D_i^M * M + D_i^F * F + D_i^E * E + V \$ + ) e_i$$

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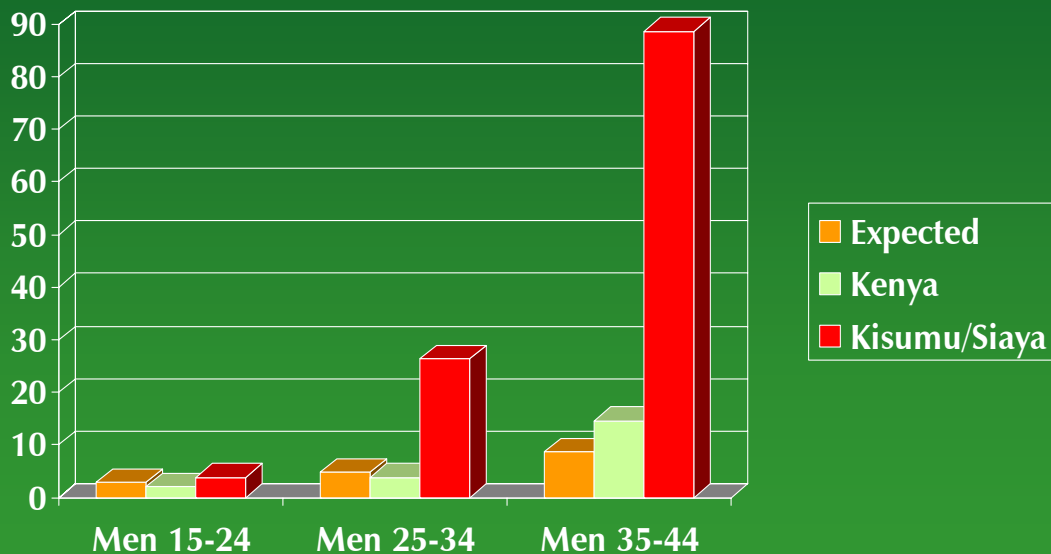
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## Adult Mortality Rates - Women



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## Adult Mortality Rates - Men



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## Finding 1: Important Gender Differences in Prevalence of Adult Death

- Afflicted Men
  - 49% were in highest income quartile
  - About half were household heads
- 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: Campaigns Need to Also Target High-Income, High-Status Men

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## Finding 2: Effect on *Household Composition* *Depends on Who Dies*

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- Head-of-household death → - 1.5 members
  - Older daughters more likely to leave
    - In 60% of these cases: marriage
    - Major loss in adult labor
- 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 incur less of an economic shock

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## Finding 3: Gender Effects of Mortality on Crop Cultivation

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- Death of male head → - 0.9 acre to sugarcane, horticultural crops
- Death of female head → - 1.8 acre to cereals, tubers

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## Finding 4: Effects of Death on Farm Production Sensitive to Gender, Position in HH

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- 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?
  - High frequency of females leaving after male hh-head dies
  - Loss of female ag. labor to caregiving
  - Loss of higher-return crops
- Insignificant effects in case of death of other hh member

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## Finding 5: Greatest decline in farm assets among hhs suffering male hh-head mortality

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- Mainly sell off small animals and farm equipment
- Cattle assets actually increase after male head dies (bride dowry from daughters leaving?)

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## Finding 6: Loss of Off-Farm Income

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- Death of Female Head/Spouse:  
-\$438 per year (not significant)
- Death of Male Head  
-\$193 (highly significant)

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## Finding 7: Little Indication that Households are Able to Recover Quickly

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

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# Implications

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- Need Special Targeting Assistance to Widows and their Households
- Need to Overcome Gender Barriers to Women's Participation in Training Programs for Cash Crops

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## Implication - 2

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- Widow Inheritance, common in Nyanza Province, needs more public campaign attention.
- Targeting strategies aimed at widows may reduce economic need for widow inheritance and associated risky behaviors
  - e.g. Land tenure security for widows

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## Implication - 3

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- Not Clear that Focus Should be Put on Low-Input Ag. Tech
  - Adult Mortality also depletes capital and land
  - Cultivate all available land and get low returns?  
vs.  
Maximize returns using intensive cultivation of less land, rent out the rest
- Rise of cassava in southern Africa concurrent with cuts in maize/fertilizer subsidies in 1990s

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- **What is the appropriate allocation of limited financial resources between:**
  - **Investing in Long-Term Productivity (e.g. education, governance, infrastructure)**  
vs.  
– **Investing in responding to AIDS**
- **Highly synergistic**

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