Prime-Age Adult Morbidity and Mortality in Rural Rwanda: Which households are affected and what are their strategies for adjustment?

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Outline

• Context
• Objectives
• Data
• Results
  – Prevalence
  – Characteristics of affected households and individuals
  – Effects on agricultural activities of the household
  – Strategies to deal with stress
• Conclusions
Context

• Civil war/genocide leading to social and economic disruption
• HIV/AIDS increasing throughout region, including rural areas
• Need for understanding and response
  – Government of Rwanda and other countries
  – NGOs
  – Intl. Organizations
  – Donors

Objectives

• Identify characteristics of affected households (HH) and individuals

• Identify agricultural strategies of affected HHs
  • Gender dimensions of those strategies

• Analyze implications of HH strategies for interventions/programs
### Data

MINECOFIN households surveys (6000 hhs)
- 2001 Living Conditions Survey

MINAGRI households surveys: (1500 hhs)
- 2000-2002 Seasonal Production data
- 2001 Demographic data
- 2002 Illness & Death data

### Definitions

Prime age adults: Adults between 15 and 60 years of age
- “Prime” for economic activity
- “Prime” for sexual activity and risk of contracting HIV

Chronically ill adults: Adults who have been ill >= 3 months in past 12 months

Death: Retrospective for 4 years
Illness: Retrospective for 12 months
What differentiates HIV/AIDS from other shocks?

• Prolonged rather than sudden in nature
• Confounding effects of other diseases
• Implications of the HIV status of one member for other members
• Societal reactions (stigmatization)

Results: Prevalence of mortality and morbidity

• Deaths: 222 households (15%)
  – Prime age death due to illness: 67 households (5%)
  – Prime age death due to other causes: 26 households (2%)
• Current chronic illness:
  – Prime age adult: 95 households (8%)
• Current chronic illness and a death: 6 hhs (0.5%)
• Two adults chronically ill: 9 hhs (0.7%)
Are HH with death or chronic illness different from other HH in rural Rwanda?

<table>
<thead>
<tr>
<th>Detail</th>
<th>All other HHs</th>
<th>Type of hhs with difference</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area</td>
<td>0.16 ha</td>
<td>HHs w/female Chronic. Ill</td>
<td>0.13</td>
</tr>
<tr>
<td>Dependency ratios</td>
<td>1.22</td>
<td>HHs w/female Chronic. Ill</td>
<td>0.86 but 2.12 when ill dep.</td>
</tr>
<tr>
<td>Number of cattle</td>
<td>1.65</td>
<td>HH with ill or deceased female or with ill male</td>
<td>0.52 or less</td>
</tr>
<tr>
<td>Avg. Expenditures</td>
<td>66,500</td>
<td>HHs w/female who died from illness</td>
<td>45,290</td>
</tr>
<tr>
<td>Poverty Quintiles: % on lower two</td>
<td>38%</td>
<td>HHs w/female who died from illness</td>
<td>62%</td>
</tr>
</tbody>
</table>

Characteristics of those ill or deceased

**Adults deceased due to illness**
- More likely to have non-ag activity as primary income source
  - 20% of males who died had such income source compared to 7% overall
- Older than average
  - 37 years compared to 29 years old
  - Only 21% in 15-24 age group compared to 50% overall
- Period unable to work: 23 months (avg.)

**Chronically ill adults**
- 72% Female
- More likely to be heads or spouses
- Older than average
  - 36 years compared to 29 years
  - Only 28% in 15-24 age group
- Period unable to work: 5 months (avg.)
Characteristics of prime age adults who have died or are chronically ill compared to other adults, 2001

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Deceased adults</th>
<th>Ill adults</th>
<th>All other adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>37</td>
<td>36</td>
<td>29</td>
</tr>
<tr>
<td>% of people in 15-24 age group</td>
<td>21</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>% female</td>
<td>50%</td>
<td>72%</td>
<td>56%</td>
</tr>
<tr>
<td>Education: % with complete primary or higher</td>
<td>21</td>
<td>27</td>
<td>26</td>
</tr>
<tr>
<td>Household head or spouse (% of adults)</td>
<td>53</td>
<td>77</td>
<td>48</td>
</tr>
<tr>
<td>Primary income earning activity is non-agric.</td>
<td>13</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Period unable to work due to illness (average # of months)</td>
<td>23</td>
<td>5</td>
<td>na</td>
</tr>
<tr>
<td>Sample counts</td>
<td>73</td>
<td>112</td>
<td>4229</td>
</tr>
</tbody>
</table>

Figure 1: Rural Deaths Due to Illness, (Percent of National Total, by Province)
Effects of mortality or morbidity on household agricultural activities

**Adult death**
- Reduced farm labor (59%)
- Reduced farm skills (9%)
- Lost access to land (6%)

**Chronically ill adult**
- Reduced farm labor (80%)
- Lost land (2%)
- Reduced farm skills (2%)

- No effects (for those who have been inactive for at least year or whose primary activity was non-ag) (25%)
Strategies

• **Stress on farm labor**
  – Reliance on social networks (shared labor)
  – Hiring/bringing in labor when possible
  – Cultivate less land
  – Possible reduction in labor intensive soil fertility, anti-erosion, productivity measures

• **Assets**
  – Land rental/loaning increase, but constrained by tenure issues
  – Asset sales (land, livestock, particularly during illness)
  – Rely on social networks (loans, gifts) to survive

• Are there gender dimensions to these strategies?

Figure 1: Most important strategies for households with a deceased prime age adult, for those households with strategies, by sex of person affected

Most important strategy for agriculture and livestock
**Figure 2:** Most important strategies for households with a chronically ill prime age adult, for those households with strategies, by sex of person affected

<table>
<thead>
<tr>
<th>Most important strategy for agriculture and livestock</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New members</td>
<td>30</td>
</tr>
<tr>
<td>Buy in labor</td>
<td>20</td>
</tr>
<tr>
<td>Send away/ - school</td>
<td>10</td>
</tr>
<tr>
<td>Sell nonland assets + Work; - Leisure</td>
<td>0</td>
</tr>
<tr>
<td>+Fallow; - Cultiv.</td>
<td>0</td>
</tr>
<tr>
<td>Share labor/neighbor</td>
<td>0</td>
</tr>
<tr>
<td>Buy in labor</td>
<td>0</td>
</tr>
<tr>
<td>New members</td>
<td>0</td>
</tr>
</tbody>
</table>

**Sex**
- **Male**
- **Female**

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**Strategies for illness versus death**

*During illness,* the selling of assets and lowering of income earning potential through those sales is more frequent than after a death.

**Implication:**
- Ø Intervene prior to death

**Problem:** Stigmatization of those with HIV/AIDS and desire of HH to hide it as long as possible

*For households with a male death or illness,* reliance on social networks is higher.

With female death, higher likelihood of bringing in a new member (spouse).

**Implication:**
- Ø Reinforce rural social networks

**Problem:** Interventions designed for a specific group may introduce strains on networks.
Conclusions

• Hhs with illness and death are more likely to be very poor than other other rural Rwandan hhs, but otherwise similar

• Heterogeneity: Household strategies vary widely, so results from one country, one setting may not be applicable (eg. labor issues)

• Rural households under stress in Rwanda try to maintain labor in agriculture (new labor, hiring, sharing)

• Productivity enhancing inputs & technology fit needs & strategies, but may be beyond capacity to obtain (investment poverty)

Conclusions

• Households depend on the social networks - what happens as HIV/AIDS illness/deaths increase?
  • Targeted programs only for HIV/AIDS affected hhs may weaken social networks
  • Need for more generalized economic growth/poverty alleviation

• Ensuring land and inheritance rights for survivors - household options to avoid greater poverty and dissolution

• Non-agricultural income activities may also expose adults to higher risk of HIV infection, thus education for HIV/AIDS needs to reach rural areas
Limitations/Future research

- Panel data is needed to assess the effects of the strategies chosen, and to empirically evaluate the statements on effects and strategies.

- However, cannot just look at long term effects for design of interventions, but must try to understand what happens during illness and after death, and design interventions with that knowledge.

But in the meantime, work with households to see what they are doing and how successful their strategies are given their environment and asset base, and what interventions might increase their chances of success/survival.

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