

A deep dive into the benefits of health programs

## The services Elucid provides are relevant. Here's why.

Elucid runs health programs, focusing on health insurance awareness, and in some cases, enrollment in health insurance. In this document, you will find a strong and multifaceted evidence base showing the benefits these types of health programs can have, divided into 5 simple categories:

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### Executive Summary

Health programs provide many benefits, not only to beneficiaries themselves, but to their families, the environment, and the economy.

Health insurance increases available [household income](#) by reducing out-of-pocket expenditure on health care costs.

Enrollment in health insurance increases [productivity](#) by lowering stress levels and reducing lost productive days to illness and injury.

Health insurance offers [financial protection](#) by protecting against catastrophic health expenditures.

Households that are insured no longer need to resort to [negative coping strategies](#) such as hazardous labour, child labour, or illegal logging to make ends meet, as out-of-pocket health expenditures are reduced.

More household income also makes [investments in nutrition and education](#) possible, as money does not need to be reallocated from these expenses to cover health care bills.

## Household income

### Health insurance reduces out-of-pocket expenditures for healthcare by boosting available household income for food and non-food necessities

- Summary: A mixed-methods, longitudinal study of 3.300 households in Ghana found that enrollment in health insurance reduced out-of-pocket-expenditures by 86% and protected households against catastrophic expenditures by 3,0%, as well as poverty by 7,5%.
- Takeaway: While high out-of-pocket expenditures lead to catastrophic expenditures and poverty in Ghana, enrollment in the NHIS provides financial protection against catastrophic expenditures and reduces poverty
- Link to the study here: [Can health insurance protect against out-of-pocket and catastrophic expenditures and also support poverty reduction? Evidence from Ghana's National Health Insurance Scheme](#)



### 'Hardship financing' is commonly caused by health-related costs, such as illness, injury, or healthcare expenses

- Summary: A study using data from Cambodia's Socio-economic Survey looked at 10.075 households. The study found that health loans are high (median = 975,6USD), with high monthly repayments (median = 50,7USD). The findings estimate that 50.122 households (projection) hold an outstanding health debt nearing 90 million USD.
- Takeaway: out-of-pocket healthcare expenditures, injuries and illness significantly increase hardship financing. Healthcare costs still represent a large financial problem for many households. Financial risk protection will increase social health protection.
- Link to the study here: [Hardship financing, productivity loss, and the economic cost of illness and injury in Cambodia](#)

## Productivity and well-being

### Illness and injury translate into lost productive days

- Summary: A study using data from Cambodia's Socio-economic Survey looked at 10.075 households. The study found that in Cambodia, the economic burden from annual lost productivity from illness or injury amounts to 459,9 million USD - 1,7% of the GDP.
- Takeaway: Illness and injury result in large economic and productivity losses when illness and injuries arise. Financial risk protection will protect against extreme economic loss.
- Link to the study here: [Hardship financing, productivity loss, and the economic cost of illness and injury in Cambodia](#)



## **Health shocks reduce investments in farm labor, agricultural inputs, and overall production, resulting in diminished productivity and income**

- Summary: Increases in the days of illness reported in a household reduce the use of family labour for land preparation. A one percent increase in illness days is associated with a reduction of family labour use for land preparation by 3 percentage points. During the crop harvesting phase, a one percent increase in days ill reduces the value of total agricultural production by around 2%, and by 1,9% if illness occurs in the land preparation stage
- Takeaway: Preventative health care interventions are important to reduce the consequences of ill-health in agriculture. Reduction of out-of-pocket health expenditures may reduce the impact of healthcare expenses on investment in agriculture.
- Link to the study here: [The effect of health shocks on agricultural productivity: Evidence from Ghana](#)
- Summary: the study found that medical emergencies have a significant negative association with a decreased likelihood that smallholder farmers cultivate cocoa, by 3.9%, which can drive them into poverty and reduce their productivity. The study estimates that medical emergencies can be shown to be correlated with a 853 million USD decline in cocoa exports, and a 125 million USD decline in tax revenue - around 0.2% of the Ivorian GDP, in 2017.
- Takeaway: Medical emergencies have a negative impact on productivity and product output, causing poverty on an individual level as well as widespread economic losses.
- Link to the study here: [Medical emergencies and farm productivity in Côte d'Ivoire](#)

## **Enrollment in health insurance is associated with lower self-reported stress levels and may be associated with lower cortisol levels**

- Summary: A Randomised Control Trial in Nairobi, Kenya, examined 900 participants. Health insurance was shown to lead to a significant decrease in scores of self-reported stress (0,26SD, Perceived Stress Scale) compared to the control group. Cortisol levels also decreased by 0,14–0,15 log units in the insured group compared to the control group. Both results are statistically significant.
- Takeaway: Suggestive evidence exists that health insurance reduces cortisol and self-reported stress levels, possibly conferring a “peace of mind” effect to the insured.
- Link to the study here: [Economic and psychological effects of health insurance and cash transfers: Evidence from a randomised experiment in Kenya](#)

## **Health insurance increases the use of agricultural input and hired labour**

- Summary: The NHIS in Ghana has a positive impact on smallholder land-related investments in agriculture, of around 40%. This is because farmers with NHIS are able to utilise their saved income from health expenses for agricultural inputs.
- Takeaway: The National Health Insurance Scheme makes it possible for farmers to save money and spend it on productive investments.
- Link to the study here: [Impact of health insurance on land-related investments in Africa: Evidence from Ghana](#)

### **Medical emergencies are correlated with massive reductions in productivity**

- Summary: "The paper finds that a medical emergency is negatively and significantly associated with a decrease in the likelihood that a smallholder farmer cultivates cocoa of 3.9 percentage points, driving them into poverty and reducing productivity at the lower quantiles. The paper then estimates that medical emergencies can be correlated with the decline in cocoa exports of \$853 million and in tax revenues of \$125 million, representing 0.2% of the Ivorian gross domestic product (GDP) in 2017."
- Takeaway: medical emergencies lead to huge losses in productivity
- Link to the study here: [Medical emergencies and farm productivity in Côte d'Ivoire](#)

### **Poor vision is linked to poorer economic farm performance**

- Summary: "Our analyses indicate a statistically significant and economically meaningful association of poor visual acuity with economic farm performance. Our results show that gross margins for cropping activities per year could be, on average, around 630 USD higher if farm managers were able to correct for poor vision. Our results suggest that poor visual acuity impairs farm managers from tapping the full potential of their business, which in turn decreases their chance to break the vicious cycle of poverty"
- Takeaway: poor vision is preventing farmers from breaking poverty cycles and achieving their full economic potential
- Link to the study here: [The effect of poor vision on economic farm performance: Evidence from Cambodia](#)

## **Financial protection**

### **Catastrophic health expenditures can lead to the loss of income-generating resources**

- Summary: A systematic review and meta analysis of studies covering 1.040.620 households across 31 countries in sub-Saharan Africa found that the pooled annual incidence of catastrophic health expenditure was 16,5% for a threshold of 10% of total household expenditure and 8,7% for a threshold of 40% of household non-food expenditure.



- Takeaway: A worrying share of households experience catastrophic health expenditure when accessing health care services. Stronger mechanisms for financial protection are needed.
- Link to study here: [Catastrophic health expenditure in sub-Saharan Africa: a systematic review and meta analysis](#)

### **Health insurance protects against catastrophic health expenditure significantly**

- Summary: A systematic of studies covering 650.297 households across 29 countries in sub-Saharan Africa found that health insurance was significantly associated with catastrophic health expenditure on a population level, in that it was protective against catastrophic costs
- Takeaway: Health insurance is a protective factor against catastrophic health expenditure
- Link to study here: [Factors associated with catastrophic health expenditure in sub-Saharan Africa: A systematic review](#)

### **Insured households experience catastrophic health expenditures less than uninsured households**

- Summary: A systematic review of 9 studies, involving 13.304 individuals and 38.792 households across Nigeria and Ghana found that the proportion of households encountering catastrophic health expenditure was lower among insured than uninsured households. Additionally, National Health Insurance was reported to have a protective factor against catastrophic health expenditure.
- Takeaway: National Health Insurance is associated with a lower proportion of catastrophic health expenditure, and also actively protects against catastrophic health expenditures.
- Link to study here: [Do national health insurance schemes guarantee financial risk protection in the drive towards Universal Health Coverage in West Africa? A systematic review of observational studies.](#)

### **Negative coping strategies**

#### **Enrollment in health insurance reduces child labour and increases school attendance**

- Summary: A cross-sectional study of 2.228 farming households in Ghana showed that the effect on child labour through introducing the National Health Insurance Scheme is pronounced, with a statistically significant decline in the incidence of child labour by 8,8% in a high sickness intensity sample. The time spent attending class increased by one hour in the same sample.



- Takeaway: National health insurance reduces child labour and increases school attendance
- Link to study here: [The Social Value of Health Insurance: Results from Ghana](#)



### **Enrollment in health insurance reduces hazardous labour and child labour**

- Summary: A Randomised Control Trial of 12.935 individuals in 2.097 households in Pakistan found a highly significant and large negative effect of health insurance on hazardous occupation and child labour earnings.
- Takeaway: Child labour and hazardous labour can be significantly reduced by enrollment in health insurance
- Link to study here: [Can health-insurance help prevent child labour? An impact evaluation from Pakistan](#)

### **Subsidies of health care costs help reduce illegal logging to pay for health care**

- Summary: A non-randomized controlled longitudinal study of 1.498 farming households in Borneo showed that a health care access intervention (clinic discounts offsetting costs historically met through logging) averted an estimated 27,4 square kilometres of deforestation – a roughly 70% reduction of deforestation.
- Takeaway: Negative coping strategies such as illegal logging can be reduced if alternative methods of paying for/affording health care are provided
- Link to study here: [Improving rural health care reduces illegal logging and conserves carbon in a tropical forest](#)

### **Investments in nutrition and education**

#### **Health insurance increases household non-food consumption, such as for education**

- Summary: A quasi-experimental cross-sectional study including 37.128 individuals in Ghana showed that the introduction of the National Health Insurance Scheme led to higher non-food consumption, such as for housing, utilities, transportation etc.) by 3USD, or 6% of the mean.
- Takeaway: Health insurance allows household income to be used for other things, as household income does not need to be used to cover health costs.
- Link to study here: [The Social Value of Health Insurance: Results from Ghana](#)



#### **Health insurance for mothers decreases child malnutrition by promoting maternal healthcare use and providing diversified diets for children**

- Summary: A cross-sectional study including 109.019 children under the age of 5 across 32 sub-Saharan African countries showed that mothers' health insurance decreased child stunting and underweight through maternal healthcare utilisation & the provision of diversified diets to children.
- Takeaway: Health insurance increases the use of healthcare. Health insurance has an impact for the entire household, including the dependents of insured household members.
- Link to study here: [Reducing children's malnutrition by increasing mothers' health insurance coverage: A focus on stunting and underweight across 32 sub-Saharan African countries](#)

### **Health insurance reduces the prevalence of stunting by 45% among children under 5 years old**

- Summary: A retrospective cohort study of 1.404.631 children under the age of 5 in 9 provinces in Argentina showed that the prevalence of stunting and underweight decreased 45,0% and 38,0% respectively in children covered by the universal health coverage programs 'Plan Nacer' and 'Programa Sumar'.
- Takeaway: Undernutrition can be combated by universal health coverage programs
- Link to study here: [Impact of Universal Health Coverage on Child Growth and Nutrition in Argentina](#)

### **Health shocks cause a reduction of household expenditure on food to fund medical expenses**

- Summary: An econometric analysis of 7.300 individuals and 28.000 households in South Africa showed that there is a strong suggestion that higher income households respond to health shocks by reallocating household expenditures away from food.
- Takeaway: Out-of-pocket expenditure requires the reallocation of household funds, which is not always possible. Financial protection mechanisms may help against this.
- Link to study here: [Health shocks, medical insurance and household vulnerability: Evidence from South Africa](#)

### **Health insurance is associated with an improvement in learning outcomes for children**

- Summary: National Health Insurance Scheme subscription was associated with an improvement in the written calculation of children by 12,3%, as well as with a 13,4%& 12,4% improvement in children's abilities to read and write English/French, respectively.
- Takeaway: Health expenditure reduces expenditure on education in poor households, which can lead to a reduction in children's academic performance. NHIS subscription protects against unexpected health expenditure, freeing up income for households to spend on children's education.

- Link to the study here: [Household National Health Insurance Subscription and Learning Outcomes of Poor Children in Ghana](#)

## Barriers to care & risks to health

**There are multi-level barriers to cervical cancer screening in Uganda, including limited awareness, stigma, transport costs, staff shortages, and stock-out of supplies**



- Summary: "Cervical cancer is the leading cause of cancer-related deaths among women in Uganda, yet screening uptake remains low. To understand how to improve access, we interviewed healthcare workers and administrators at St. Mary's Hospital Lacor and its peripheral health centres. Participants described multi-level barriers, including limited awareness, stigma, transport costs, staff shortages, and stock-out of supplies. They also identified facilitators, such as targeted health education, routine referrals from all care entry points, outreach screening, and free services."
- Takeaway: "Multi-level interventions are needed to strengthen facility workflows, staff capability, community engagement, and reliable supply chains. Expanding access to self-collected HPV testing may overcome major barriers and represents a promising strategy to increase screening uptake in Uganda and similar low resource settings".
- Link to study here: [Barriers and Facilitators to Cervical Cancer Screening in Northern Uganda: Qualitative Insights from Healthcare Workers and Administrators](#)

## There are high financial barriers to malaria care in Uganda

- Summary: "The mean societal economic cost of treating suspected malaria was \$15.12 [95% confidence interval (CI): 12.83–17.14] per outpatient and \$27.21 (95% CI: 20.43–33.99) per inpatient case. Households incurred 81% of outpatient and 72% of inpatient costs. Households bore nearly equal costs of illness, regardless of socio-economic status. A case of malaria cost households in the lowest quintile 26% of per capita monthly consumption, while a malaria case only cost households in the highest quintile 8%. We estimated the societal cost of malaria treatment in Uganda was \$577 million (range: \$302 million–1.09 billion) in 2021. The cost of malaria remains high in Uganda. Households bear the major burden of these costs. Poorer and richer households incur the same costs per case; this distribution is equal, but not equitable."
- Takeaway: "These results can be applied to parameterize future economic evaluations of malaria control interventions and to evaluate the impact of malaria on Ugandan society, informing resource allocations in malaria prevention."
- Link to study here: [Who pays to treat malaria and how much? Analysis of the cost of illness, equity and economic burden of malaria in Uganda](#)

## Pesticide exposure and PPE practices among farming communities

- Summary: "A survey was conducted to investigate farmers' knowledge, attitudes towards pesticide use, storage/disposal, exposure risks and health symptoms in one of



the eight cocoa growing regions in Ghana. A considerable proportion of the farmers (32%) used the bush as a storage facility for pesticides, 17% of the farmers stored chemicals in their living rooms, 3% of the farmers stored chemicals in their kitchen, 15% in their food storeroom, and 4% in the animal house. Personal protective equipment (PPE) use was positively associated with advice obtained from agrochemical shops (OR = 1.735,  $p < 0.01$ ) and extension services (OR = 1.643,  $p < 0.01$ ) as sources of information for PPE use. Female farmers (OR = 0.481,  $p < 0.01$ ) were less likely to use PPE. With respect to location, farmers in Suaman district were less likely to use PPE (OR = 0.56,  $p < 0.010$ ) compared with farmers in Wassamanfiam.

- Takeaway: "Reinforcement of appropriate pesticide storage and PPE education are necessary for securing safety in pesticide use."
- Link to study here: [Assessment of pesticide exposure risks among cocoa farmers in Western region of Ghana](#)
- Summary: "Four hundred and four cocoa farmers were chosen randomly from 26 communities in four cocoa-growing regions of Ghana to answer questions about their risk knowledge, awareness, and practices, including personal protective equipment, storage and disposal of leftover pesticides, and used containers. The study revealed that 87% of the respondents belonged to cooperatives and certification groups. There was a significant positive relationship between group membership and benefits derived from inputs and training in pesticide use. Although farmers claimed adequate pesticide knowledge, this did not translate into practice, with the majority exhibiting improper pesticide storage, application, and disposal practices. Farmers appeared to know a lot but lacked the skills and attitude to put their knowledge to use. The improper practices appear to manifest in a variety of health symptoms experienced by farmers as a result of chemical exposure"
- Takeaway: "'Cocoa farmers in Ghana require adequate practical training and support on pesticide use to reduce their associated health risks, protect the environment and ensure sustainable cocoa production.'"
- Link to study here: [Knowledge, perception, and pesticide application practices among smallholder cocoa farmers in four Ghanaian cocoa-growing regions](#)

### **In Ghana, key gaps in access and quality continue to shortchange women's needs, choices, and rights with regard to antenatal care, maternity care, and family planning**

- Summary: "Reproductive and maternal health services are predominantly used by women and girls. In Ghana, these services are expanding, but key gaps in access and quality continue to shortchange women's needs, choices, and rights with regard to antenatal care, maternity care, and family planning. Provider counseling is often incomplete, and maternity services and lifesaving commodities are less available at community-level facilities and in the public sector. Inadequate infrastructure, including water, electricity, and toilets, further undermines safe and respectful care. Women's access to and choice of family planning services and methods is constrained by limited service, provider, and commodity availability. Preventive and protective services, such as

cancer screening and gender-based violence screening and care, are scarce, leaving major gaps in women's right to comprehensive health. Finally, women face significant out-of-pocket costs, particularly at district and non-public facilities, compounding inequities in access."

- Takeaway: "To achieve women-friendly care, it is important that Ghana expand service readiness in public sector and community facilities and strengthen women's access to affordable, respectful, and responsive health services."
- Link to study here: [Women-Friendly, Quality Reproductive and Maternal Care in Ghana: Findings from the Service Delivery Indicators Health Survey \(English\)](#)

### **Heat stress can have myriad negative health impacts for workers in garment and textile factories**

- Summary. A randomised crossover trial was conducted in a typical garment factory in Bangladesh. Quote: "In hot conditions, the capacity to perform physical work declines, leading to reduced productivity. Workers must subsequently work longer hours to receive the same pay or accept lower income. Highly motivated workers might maintain high work rates despite the heat but suffer an increased risk of illness and injury from elevated thermal, cardiovascular, and/or renal strain."
- Takeaway: "Sustainable cooling interventions can reduce physiological heat strain under peak heat stress conditions in a typical non-airconditioned Bangladeshi ready-made garment factory. Cooling benefits were greater in males, highlighting potential gender-based workplace heat stress inequalities."
- Link to study here: [Sustainable cooling strategies for workers in the ready-made garment factory industry in Bangladesh under simulated extreme heat: a randomised crossover trial](#)
- The International Labour Organization (ILO) has a report on labour productivity and heat stress, stating that "By 2030 the equivalent of more than 2 per cent of total working hours worldwide is projected to be lost every year, either because it is too hot to work or because workers have to work at a slower pace. In Southern Asia and Western Africa the resulting productivity loss may even reach 5 per cent. Unfortunately, heat stress is often accompanied by other challenges as it is more prevalent in countries with decent work deficits, such as a lack of social protection and high rates of informality and working poverty. Excessive heat levels aggravate inequality between rich and poor countries, and between population groups within the same country.". This is a particular problem for "for a large proportion of the world's 1 billion agricultural workers and 66 million textile workers (many of whom have to work inside factories and workshops without air conditioning)"
- Takeaway: Heat stress threatens both health and productivity severely, and action must be taken to reduce the risks it poses
- Link to study here: [Working on a warmer planet: The impact of heat stress on labour productivity and decent work](#)

## Sustainable Agriculture

**“The study finds a strong positive association between the NHIS enrolment status of farm households and investments in agricultural land and soil health improvement.”**

- Summary: “The study finds a strong positive association between the NHIS enrolment status of farm households and investments in agricultural land and soil health improvement. Precisely, farm households who are enrolled in the health insurance system tend to invest about 32% more in soil and land improvement activities and 30% more in hired farm labour than households who are not enrolled in NHIS.”
- Takeaway: “The overall evidence from our study suggests that instead of high investments in fertilizer and other input subsidy programmes in Africa, sustainable smallholder agricultural investments can be achieved if concerns and issues of farmers’ health coverage are adequately addressed.”
- Note: “*This is one of the first papers that have explored the impact of NHIS in developing countries on farm investments.*”
- Link to study here: [Impact of national health insurance enrolment on farm investments in Sub-Saharan Africa: empirical evidence from Ghana](#)