



## ECONOMIC IMPACT OF LACOR HOSPITAL ON THE SURROUNDING AREA

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### INTRODUCTION

The health care industry is an important contributor to the economy, especially to that of the area surrounding health institutions. This effect is even more marked in the case of rural facilities. At national level, it comes in the form of ensuring a healthy productive population and saving costs that would have otherwise been spent on treatment, thus liberating them for use on other developmental purposes. However, being a labour-intensive industry, it also contributes by providing employment for a significant section of the working-age population. At local level, in addition to the general benefits mentioned above, it comes in the form of attracting significant government and external investment to the area, and providing a market for local goods and services. It also helps to 'keep health dollars at home' by ensuring that locals are treated within their area and thus retaining their health expenditure within their own economy. Yet, the economic impact of the health care industry is still under-estimated the world over, Uganda inclusive. Until recently, most studies of economic impact concentrated on the contribution of activities other than health care (Scorsone 2001; Scorsone 2002) and as such, there are few articles available to be reviewed about healthcare.

Although healthcare contributes to economic growth, some studies have not found it to be among the leading causes of rural economic growth. In a study of rural USA, presence of healthcare services was not perceived by the respondents to be even one of the top 25 causes of rural economic growth (Aldrich and Kusmin 1997). This study in Lacor was therefore done to try to identify and highlight the economic contribution of St. Mary's Lacor Hospital to the war-torn Gulu region of northern Uganda, which contribution though quietly perceived, has never been quantified and, as such, appears to have been ignored.

By the economic impact of an organisation on an area, we refer to the influence of that organization on the local economy in terms of the level of economic activity generated as a result of the presence of that organisation.

This could be the amount of money it injects into the area from its budget, the employment it provides, the goods and services it consumes from the area thus providing a market for them, the money it attracts to the area from the government, donors and researchers, and its role in the attraction and retention of businesses and other gainful economic activity in that area. The net economic impact of such an organisation is, therefore, the expansion or contraction of an area's economy. This should, however, be distinguished from the gross economic effects due to mere influence on the jobs, businesses or incomes (Weisbrod and Weisbrod 1997). The diagram below shows a model of the interaction between an industry like a healthcare institution producing health care and the community, containing other industries and households.

The institution absorbs inputs from outside the local economy and uses some from the local economy to produce its products. Its products are consumed by the local community and beyond. The institution may also make expenditures and investments outside the local economy as shown in this second model.

Economic impact studies try to measure the direct, indirect and induced effects of an institution on the economy. The institution's direct expenditure, such as when a hospital pays its local staff, is a direct input into the local economy. Purchase of goods and contracted services from the local area such as office and medical supplies, kitchen, cleaning and laundry supplies, masonry etc. is an indirect input. When the employees of the health care institution and those of its suppliers of goods and services get and spend their money in the local economy, this is an induced impact on that economy due to the presence of that institution. Thus, initial expenditures in the health sector cause a ripple of expenditures in the economy, the so-called 'ripple effect'. The health sector and hospitals in particular are regarded by many a policy maker as economic 'black boxes', merely absorbing resources with, in most cases, no light on how they spend them or as 'bottomless black holes' consuming resources on end. Rarely are they seen as 'economic boosters' or 'productive' entities. In reality, however, the health sector leads to the creation and thriving of support business and payment of taxes around it (Philippakos et al. 2002). That is not to mention the economic impact that is gained by the local economy when the people are treated and gain energy to produce or the gains due to the cost of illness and death saved by receiving health education on health promotion and prevention of illness or actually being treated or rehabilitated in the hospital. Apart from health care provision at various levels, Lacor hospital makes similar economic contributions to the area of Gulu District.

### STUDY AREA

St Mary's Lacor Hospital, found 6 kilometers west of Gulu town, the regional capital and 320km north of the national capital, Kampala, started as a small dispensary 46 years ago in 1957, founded by the missionaries. As of now, it is a 460-bed hospital of regional and national referral importance, primarily serving the population of Gulu district but also receiving patients from other parts of Uganda and neighboring countries. It offers services ranging from promotive and preventive, through curative and rehabilitative health care services including specialist radiotherapeutic services and is a training centre for different cadres of medical personnel. In order to further improve accessibility of health services to the community, the hospital also constructed three satellite health centres in the neighbouring sub-counties of Amuru, Opit and Pabo. It gets its funding from three main sources: the government of Uganda (delegated funds), user fees and donations (mostly from external sources).

Gulu district, where Lacor Hospital is found, is bordered by seven districts: Adjumani, Arua and Nebbi to the West; Apac and Masindi to the South; Kitgum and Pader to the East and has a total population of 479,496 with an annual population growth rate of 3.0 % per annum (UBOS 2002). For over 15 years, the district has had insecurity due to the fighting between the government army and the successive rebel armies of the Uganda Peoples' Democratic Army (UPDA), the Holy Spirit Movement (HSM) and now the Lord's Resistance Army (LRA) which has led to many deaths and disruption of life in the district, with massive displacement of people, most of who have ended up either in urban areas or in camps set up by the government for the Internally Displaced. Normal life, food production, education, health and other social services have all been disrupted by the insecurity for all this time and the district has some of the worst health indicators in the country with the Infant Mortality Rate at 172/1,000 live births (national average is 89/1,000 live births), Maternal Mortality Rate at 700/100,000 live births (national average is 506/100,000) and Life Expectancy at Birth being 39 years (males) and 41 years (females). The crude birth rate is 53.7 per 1,000 and crude death rate 21.7 per 1,000 (DDHS Gulu 2003). It has 59 health units (4 hospitals, 3 Health Centres of level IV, 17 of level III and 35 of level II) but only 30% of the population lives within 5 km from a health facility and most of the lower level units are currently not operational due to the insecurity. Less than 10% of the adult population is formally employed and 75% of households survive on subsistence farming. In 1993, the average income per family in the northern region of Uganda was 37 US\$ per annum, far below the then national average of 52 US\$ per annum (MoFEP 1993).

### EVIDENCE FROM THE LITERATURE

The economic impact of the health sector on the rural economy has not been widely studied. From our search, mainly limited to the internet, we did not find any similar study in Uganda to refer to and none in the Africa region either. Most such studies were done in the US but, even there, further research still needs to be done with a view to standardise the methodology in order to fully capture and compare the true impact. The few that have been done however show the importance of the sector in boosting the rural economy.

Although the primary mission of a health care institution is to provide quality health care services to the users and contribute to the improvement of their health status, it has become clear that the actual contribution of health care facilities goes far beyond and they also contribute in many ways to the economy of an area. The direct contribution of a health institution in terms of its monetary expenditure is easier to measure than the indirect contribution. Hospitals do not just provide jobs but support the economy by paying taxes, licensing fees and providing uncompensated benefits. Even where hospitals are nonprofit, like Lacor, and may be entitled to some tax exemptions, they still pay a lot of money in taxes. In the Washington state of USA in the year 2000, 36 urban hospitals paid over US \$360 million in taxes (Health Care Personnel Shortage, 2003). In fact, in the 2001/2002 Financial Year, Lacor Hospital paid over Uganda Shillings 308 million in taxes and statutory costs other than VAT (Driwale et al. 2003).

Hospitals make a place attractive to live in for many people and in countries with pension and Medicaid schemes, hospitals offering quality services attract retirees to live nearby. These retirees receive money from outside the local area on a regular basis either as pension or as medical care expenses. If they are insured, the money is received directly in the hospitals. Depending on its reputation, 'medical tourists'—people from outside the normal catchment area of the hospital also come to benefit from the services of the hospital. Thus in a way, the hospital 'exports' its services and gets paid, bringing in money from outside the local economy and is an important 'engine' of economic growth.

In Georgia State, (USA) the Economic Forecasting Center of Georgia State University reported that hospitals in the state had contributed US \$26 billion to the state's economy in 1997 and that in the city of Athens alone, three hospitals had had an economic impact of US \$656 million, creating 8,146 new jobs on top of their 3,000 payroll (Jones and Salzer 1999). Economic impact studies in rural Georgia (Dever et al. 2000) and the Johns Hopkins University Hospital (JHU) in Baltimore, Maryland, 2002, have shown that most rural health care providers offer employment to the local population, purchase goods and services from the surrounding community and their employee incomes are mostly spent locally. In addition, the presence of a health institution in a locality can induce other economic investments such as banks, markets and shopping malls. These economic investments result from the perception of the people of the benefits that can accrue from the presence of a given health institution. Apart from being major employers, usually the second after schools, rural hospitals pay relatively higher salaries than other employers in the area and purchase a lot of goods and services from the local market. The Georgia Hospital Association (GHA) found that the total economic impact of rural hospitals in Georgia in 1998 amounted to US \$5.5 billion, of which indigent care, charity care and other non-reimbursed care was valued at US \$172 million and US \$29 million was paid in taxes (Philanthropic Collaborative 2002). The South Georgia Medical Centre alone contributed US \$438 million to the state economy in 2001. According to the GHA, the direct hospital expenditure was about US \$146 million but when combined with an output multiplier, it increased by US \$327 million of which US \$110 million was earned through the household earnings multiplier (Watson 2003).

Also in Georgia, the Tanner Health System, owning a string of hospitals, was a significant contributor to the economy. In 2001, the system contributed US \$283.3 million to the economy and helped sustain 2,850 full-time jobs in the area. In particular, it contributed US \$71.8 million in household earnings and spent US \$57 million as salaries and wages for its 1,600 employees. They also spent US \$9.4 million in care for indigent persons and yet received no tax subsidy. Overall, the Georgia Hospital Association noted that hospitals throughout Georgia contributed more than US \$9 billion in direct expenditure and produced a total economic impact of US \$29.3 billion each year. "The numbers tell a very important story to the public—that our hospitals not only protect and preserve the health of every individual that seeks medical care, but they are vital to the economic wellbeing of the state" (The Tanner Health System 2002).

The JHU study mentioned above showed that the hospital added 1,000 jobs to its payroll each year and that 85,000 jobs (one in every 29 in Maryland) were a direct result of investment in the hospital which contributed US \$7 billion each year (one of every US \$28 in the state) to the state economy. The Health Care Association of New York State, HANYS, states that the hospitals of the State directly or indirectly employ more than 700,000 people and are worth nearly US \$75 billion to the economy, about 10% of the state's gross product (Business First 2003)

Apart from direct cash contribution, health institutions are also capable of mobilizing untapped resources from the community in many forms like donated labour. In Maryland, the Hospital Association (MHA) showed that in 1996 alone, over 16,000 individuals volunteered some work at the hospitals, totaling 1.8 million hours valued conservatively with the minimum wage at a total cost of US \$10 million (MHA, 1999). This story is echoed all over the USA. For example, in Pennsylvania, hospitals were also found to be an important driving force in that state's economy. They were the state's second largest employer (after eating and drinking places) and contributed nearly US \$34 billion to the state's economy in 2002, of which US \$17.5 billion was in direct industry output, US \$16.4 billion in ripple effects and the hospitals created 259,449 full-time equivalent (FTE) jobs and an additional 179,455 jobs as secondary employment (Shields 2003). Hospitals are also recognised for contributing to the local economy by bringing in research funds from external sources. A hospital like Lacor which has opened its gates and offers its services and data for research brings in a lot of funds in form of research funds and other payments spent on and by researchers.

Even where researchers have not used multipliers, health care has still proved to be a leading industry. Mary Steff and Richard Butler are reported to have shown that despite heavy tourism and military industries in the San Antonio (Texas, USA) area, even without using multipliers, health care was by far the leading source of income, raising US \$7.5 billion in direct expenditure against tourism's US \$4.05 billion in 1999. The same authors emphasise that although there had been slower growth in the health care industry of the area, "even slow growth in a big industry has some impact" (Silva 2000).

Hospitals also serve to retain in the local economy funds that would have been spent on health care elsewhere. A hospital in an area helps retain these 'health care funds' and thus prevents their 'leakage' outside the local economy. Nowhere has this effect probably been as well documented as in North Dakota (USA), where the economic impact of Community Hospitals, which mainly treat residents, was very significant even without adding the local funds received in Military, Veterans, Administration, State and Native American facilities that may also treat foreigners and visitors to the state. North Dakota community hospitals and associated clinics and nursing homes accounted for about US \$807 million of in-state expenditures and net returns, employed 14,000 full-time-equivalent positions and still paid US \$47 million in state-collected tax revenue in 1997 (Moran 1999). This much would have probably been spent outside the state, the jobs would not have been created locally and the taxes paid locally, had there not been those community hospitals.

In a graphical story, the true economic impact of the hospital sector, even the non-profit ones like Lacor, is further highlighted in The Cincinnati Enquirer of July 29<sup>th</sup> 2003 (Kentucky, USA). "Many know that Greater Cincinnati's economy benefits from the tourists who come here to watch pro sports or to visit the zoo. But who knew that medical tourists—out-of-town residents coming here for hospital care—generated more than US \$363 million last year for the local

economy? The figure dwarfs the estimated US \$75 million out-of-town fans are expected to spend this season at the new Great American Park Ball. It blows away the US \$19.5 million in new money brought to town by the visitors to the Cincinnati Zoo....."Even though every hospital in the metro region is a non-profit organization, they still generate US \$216 million a year in local and state income taxes, mostly from employee earnings". The story further highlights the similarity of the negligence of this type of hospitals by their respective local governments and the politicians in developed as in developing countries –"Maybe it's because hospitals have been a part of their communities for such a long time that they seem like nothing special ....."(Bonfield 2003). In particular, the statement about taxes is also true for Lacor, as evidenced in Driwale et al. (2003) where 12% of the employment costs were paid in taxes other than VAT, from which the hospital is not exempt, (mainly as statutory costs like National Social Security Fund contribution and Pay-As-You-Earn income tax). In most cases, the total revenue of a health institution is the only known value of the potential economic impact on the area. However, a lot of other monetary exchange which is also dependent on the presence of the hospital takes place outside the influence of the hospital. For example, if a hospital has revenue of 5 million dollars, then this figure is, for sure, a potential direct economic impact on the community but if visitors to patients, to staff and to the hospital also spend money outside the hospital but in the same economy, that is never captured in the books of accounts of the hospital (Scorsone 2002).

The health sector is labour-intensive and, worldwide, contributes a large percentage to formal employment. Hospitals are proportionately large employers in rural areas (Dever et al. 2000). In many studies, cases, the health care industry has been found to be the second largest employer after education (Doeksen 1997) but in spite of this, it is usually short of staff and is always on a recruitment drive either for full-time or part-time employees, even when other industries are cutting jobs. In Missouri, it was observed that long after other industries had been on the decline and reducing their employment portfolio, the hospital sector was still recruiting. "If you are looking for work in Missouri, the two industries adding most jobs are education and health care ..... Local governments have added 11,000 employees over the past two years, most of them in schools while the health care industry has added over 9,000 jobs"(McLure 2002).

In Uganda, apart from the fact of employing large numbers of residents, health personnel costs (salaries and other benefits) often take up to 60% of the total operational budget for government health institutions (MOH 1999). For example, in 2001, Arua Regional Hospital had a total budget of Uganda Shillings 1.7 billion of which 1.1 billion (64.7%) was earmarked towards salaries and wages (Arua Regional Referral Hospital Annual Report 2001). In 2001/2002, Entebbe Hospital had a total budget of about Uganda Shillings 800 million of which about 500 million (62.5%) was for salaries and wages (DHHS Wakiso Annual Report 2001/2002). An earlier study in Lacor Hospital had also revealed that of its total recurrent budget of Uganda Shillings 4.5 billion in Financial Year 2000/2001, 65% was spent on personnel costs (Driwale et al. 2003). Moreover, health workers earn more than other 'traditional/civil servants of the same cadre, so having many of them in an economy is a real booster. In Uganda, the Ministry of Public Service (MOPS) has created a different tier for paying health workers, the so-called 'Medical Schedule', which clearly puts health workers in a position of some advantage, never mind that the pay is not adequate to meet their needs anyway and that there are other schedules with a better arrangement. For example, in the public sector, a newly qualified medical officer starts in Salary Scale U5a-3 earning Uganda Shillings 6,416,100 p.a. while another beginner graduate in the 'traditional/civil service also begins in the same scale but earns 5,041,680 p.a. An Enrolled Nurse who undertakes a 2½ -year course after Ordinary Level secondary school starts in salary scale U7 and earns Uganda Shillings 2,527,584 p.a. while a Primary School teacher who undertakes a 2-year course after Ordinary Level secondary school also starts in salary scale U7 but earns 1,264,439 p.a. (MOPS 2002) Nurses form the majority of health workers and a district which has many of them has more income than one with the same number of primary school teachers.

As a way of improving efficiency and effectiveness, many services in health units like food supply, printing and stationery, cleaning and laundry, construction works and maintenance are usually contracted out to private providers (Dever et al. 2000). In most cases, the tenders for the supply of these services are picked by individuals and organizations from the area surrounding the health institution. A health institution may also have a significant impact on the economy of its surrounding area through the expenditure behaviour of its employees. Most of the revenue of the institution may filter down to the local economy if the employees spend a large part of their incomes locally. This is most marked if the majority of employees are locals. These expenditures in turn support a large number of other jobs like shops, domestic hands, mechanics, carpentry, restaurants and bars. These jobs then generate additional income and another round of spending as these recipients spend money on similar goods and services, thus generating a 'ripple effect' on the economy. In a study of the economic impact of Knox County Hospital (Kentucky, USA), it was found that the hospital had an impact of nearly US \$16 million of which US \$12 million represented the hospital's direct purchases from the community and US \$4 million was due to business spending by local hospital suppliers and employees' purchases in the local economy. Therefore, if the expenditures leave the local community, via taxes and non-local spending, they can be seen as real loss of potential jobs and incomes to the local residents (Scorsone 2002; Philippakos et al. 2002). In Cincinnati, (Kentucky, USA), it was reported that 32 local hospitals had a combined economic impact of US \$7.55 billion of which US \$3.18 billion was spent in households and 93,518 jobs were supported by the hospitals. Having read the results of that study, the President of the Chamber of Commerce remarked: "this study confirms that the hospital industry is a tremendous driver of the Cincinnati USA economy through the attraction and retention of a highly skilled, well-paid workforce, combined with capital expenditures and the utilization of cutting-edge technology"(Cincinnati Business Courier 2003). In Atoka County, Oklahoma (USA), it was also found that apart from health care provision to the community, the health care sector also provided 11% of the non-farm employment in the county (Doeksen and Schot 2003). Another study covering 9 other Oklahoma counties found that approximately 9% of the total employment for each of the studied counties was directly working in the health sector and, by applying multipliers ranging from 1.45 to 1.87, the health sector accounted for up to 14% of the total employment in the state (Doeksen et al. 1998).

The contribution of the health sector to the economy of an area loses its relative importance in areas which have other major sources of revenue, especially in urban areas and in areas with other labour-intensive industries like mining and, in Nebraska (USA), a similar study revealed that the contribution from hospitals is not constant across the whole range of hospitals. Different types contribute differently and different types of businesses are affected differently by the presence of a hospital. It was found that hospitals contributed jobs ranging from as few as 77 for the small hospitals to 1,332 for the large ones and that the retail and service industries benefited more than other types of business (Cordes et al. 1999).

One of the best ways to fully appreciate the economic impact of a hospital is to study what happens to the community and economy in the area after a local hospital has closed. "The loss of a hospital, or a healthcare provider can be a blow to local economic growth"(Scorsone 2002). Basing on pre-closure models, 103 matched pairs of similar rural counties in the USA were studied (Probst et al. 1999). One set had a hospital closure and the other had a hospital which was not closed. It was observed that earned income and labour force growth were significantly reduced in closure counties than in non-closure counties.

#### MEASURING ECONOMIC IMPACT

There are three types of impact an enterprise like a hospital would have –the direct, indirect and induced impacts. The direct impact would be the amount of money directly spent by the hospital in payment of salaries and purchase of goods and other services. The indirect impact would be the money that comes to the area because of the hospital, that is, from the visitors to the hospital, the attendants and tourists who may come to have a look at the hospital. Eventually these create a demand for certain services and new economic enterprises spring up to meet these needs. The induced impact on the other hand results from the spending by the employees of the hospital and those of the suppliers to the hospital and those of the other services that may have developed around to meet the needs of the other clients of the hospital ([http://www.californiaaviation.org/pdf\\_files/airport\\_economic\\_impact.pdf](http://www.californiaaviation.org/pdf_files/airport_economic_impact.pdf) ).

There are various methods of measuring economic impact. In all cases however, it is appreciated that health expenditure has a 'ripple effect', cascading to have influence on other sections of the economy. As such each, expenditure has a multiplier effect and by determining the multipliers of each category of expenditure, one can determine the ultimate economic impact of an activity. For example, in Illinois (USA), Monge and Ellis (1997) measured the economic impact of the health care industry in Southernmost Illinois after determining that direct income impacts like staff salaries, wages, local purchases of goods and services, expenses made locally by out-of-the-area visitors of non-resident hospital patients had an income multiplier of 2.0157 and an employment multiplier of 1.2236. In effect this meant that for every dollar expended directly to local recipients by the health care industry, an additional \$1.02 would be generated in the local economy and that an additional 1.2 new jobs would be created. Adding this effect to the initial revenue resulted in a very significant impact resulting from the industry.

Multipliers are specific to regions and sectors and are not applicable across the board to other regions or sectors without caution. In addition, the ripple effect from multiplier takes time to develop fully such that within the first year, only 50% may have been realised and it comes to 0 by the 6th year. According to Scorsone (2002), multiplier effects are a simplified way of representing economic effects in a local economy. The multiplier can be interpreted as the impact of a one-unit change in sales, employment or income that results in a given impact on the local economy. It represents the recycling of money and income in the economy and this recycling process may create new job opportunities and higher wages for individuals. A multiplier is a ratio that helps to calculate the total economic effect for a variety of economic activities.

For an enterprise to have a big economic impact, the 'leakage' of its resources from the local economy to the outside in form of non-local purchases of goods and services must be minimised. For a rural hospital in developing country like Lacor, this is only possible to a certain extent for, of necessity, some expenditure must be made outside the local area like that for vehicles, some medical equipment, personnel services, some reagents, and some medical sundry. A few drugs must also be purchased outside the local economy. Some specialized services, e.g. audit and legal services must also be purchased outside. Equally, some income of the hospital employees must also be spent outside the local economy. All these represent leakages on the economic impact.

The Income Multiplier represents the total change in personal income throughout the economy brought about by the injection of one unit of income, e.g. one dollar, into the sector. Whereas Income Multipliers in other sectors may be high, those of the service sector in general (including health services) tend to lie between 1.0 and 2.0. Those above need to be re-investigated (Song et al.). The Income Multiplier for a hospital would be got by the formula:

$$\text{Income multiplier} = \frac{1}{1 - (x)(y)(z)}$$

where

x = percentage of the hospital revenue to be spent, rather than saved  
y = percentage of the expenditure by hospital and supplier staff spent within the local area and z  
= percentage of the hospital expenditure actually made within the local area (Adapted from: Robert O. Coppedge, 2003)

#### TAKING ADVANTAGE OF THE HEALTH CARE INSTITUTIONS

The presence of a health care institution in an area may result in the attraction of manufacturing, agriculture, retail and wholesale trade, finance and transport services. In the study on the economic impact of Johns Hopkins University Hospital in Maryland, it was found that a number of research organizations, engineering, information technology and bi-technology had sprung up because of the presence of a health institution. These organizations contributed up to US \$6 billion in economic activities in the area. (Scorsone et al. 2001; Scorsone 2002) However, most rural communities have not fully realized the economic importance of rural health institutions in their localities.

Perception of the local community towards the activities of health care institutions in their localities In a study done in rural Georgia it was found that, the citizens were able to relate the economic growth in their community to the presence of the hospital (Dever 2000). However, many other communities are yet to realize the importance of hospitals to their local economy and especially engage in activities that will tap into the resource leakage to suppliers outside their community. Given the complex and biotechnical nature of some health institution inputs, it is unlikely that all the requirements of an

a institution like a hospital can be met by suppliers in a rural setting. Thus a certain amount of resource leakage / loss is inevitable but the local community could try to reduce on other forms of leakage by knowing the needs of the institution in terms of type, timing, quantity and quality.

#### PROBLEM STATEMENT

St. Mary's Lacor Hospital has been in existence for over 40 years and contributes to the economy of Gulu district in several ways. Yet, the hospital is viewed by the public largely as a health service provider. In addition, because of the large amount of resources the hospital requires to deliver its services, it is also only seen as a huge consumer of resources. Its huge economic impact and potential as an engine for the economic growth of the area is undocumented and is either not recognized or ignored or, at best, under-rated. Because of lack of recognition of this role, the local community does not move adequately to trap the resources that are spent outside and so, a lot of resources that could potentially be tapped and spent locally may be going outside the Gulu area.

#### PURPOSE OF THE STUDY

This study was done to try and shed some light on the true economic impact (direct, indirect and induced effects) of Lacor Hospital on the surrounding community, in the hope that the findings thereof may help the hospital management, the local and central government authorities and the surrounding community, appreciate the hospital as an economic resource and make hospital, local and central government policies geared to making the hospital (and others in similar conditions) even more economically relevant to the surrounding community. Having appreciated this role, the local community may move to make the utmost benefit out of it by reducing the leakage of hospital resources outside the area.

#### OBJECTIVES

The study had as objectives, for the Financial Year 2001/2002, to determine

1. The direct impact of Lacor Hospital in form of its revenue
2. The proportion of total hospital revenue that was retained in the area
3. The contribution of Lacor hospital to formal employment in Gulu district
4. The value and types of goods and services supplied to Lacor hospital by local suppliers
5. The expenditure patterns of the employees of Lacor hospital and its suppliers
6. The economic activities in the surrounding communities attributable to Lacor hospital and
7. The perception of the local community about the contribution of Lacor hospital to their livelihood.

#### METHODOLOGY

We conducted a descriptive cross-sectional study, gathering both quantitative and qualitative data from within Lacor Hospital and the 15 km radius surrounding it. We studied the hospital's financial records for the year 2001/2002, observed the business activities in the surrounding community, held key-informant discussions with the management and staff of Lacor hospital, suppliers of the hospital and their employees, Gulu District local government administrators and held focus group discussions with owners of small-scale businesses in the area surrounding the hospital. Assuming that 95% of the hospital employees spend more than 50% of their earnings locally, we used the Cochran formula to calculate a minimum sample size of 76 health workers and identified the distribution across the different cadres by Probability Proportional to Size (PPS) and identified the respondents by systematic sampling. We used the same formula to determine the 36 small scale businesses to be studied and purposively selected them. In all cases, we added some extra study units to reduce the effect of non-response. Some key Gulu district administration officials like the District Director Health Services (DDHS), the Chief Administrative Officer (CAO), the District Personnel Officer and the Revenue Officer, were purposively selected because of their roles in the district and the information they could provide. Three focus group discussions were held, consisting of 7-10 participants purposively selected from the community (opinion leaders, business proprietors, employees of the hospital).

Key-informant Interviews were carried out with the use of interview guides/schedules, records were reviewed with the use of a checklist, an interview guide was used for the focus group discussions and observations were carried out with the help of a checklist. Data were analyzed manually and with the help of Microsoft Excel and EPI INFO (version 6.04) computer programmes

#### EXCLUSION FROM THE STUDY

Though we know that health care services have an impact on the economy through improving the health of the people, who can then work harder and produce more and help them to spend less on health care, thus saving their resources for even more production, this study did not attempt to quantify these aspects of the economic impact of Lacor hospital. In addition, though we knew there was a significant number of armed forces personnel in the district, they were excluded from this analysis due to the anticipated difficulties of accessing their payrolls.

#### LIMITATIONS

Due to lack of comprehensive employment data, we only compared Lacor figures with the number of people employed in the district civil service and the private health sector excluding private clinics and drug shops. Lacor hospital serves a wider community than just a 15km radius and to fully appreciate its impact, we should have studied the wider community or at least the whole of Gulu District but we couldn't due to insecurity.

#### FINDINGS

All the respondents were residents of Gulu district, with 72% living either in the hospital staff quarters, Lacor trading center or on the outskirts of the Lacor area. As of 30<sup>th</sup> June 2002, the hospital employed a total of 654 staff members of various cadres (17 doctors, 42 allied health workers, 116 nurses, 334 support personnel and 145 casual labourers) most of whom hail from the local neighbourhood.

#### TOTAL HOSPITAL INCOME, SOURCES AND AREAS OF EXPENDITURE.

During the financial year (F/Y) 2001/2, the hospital received funding from three major sources which were: self generated income, delegated funds from the government of Uganda and donations as shown below:

**Table 1 Sources of funds for Lacor hospital, FY 2001/2.**

Source	Amount Ug. Shs (%)
Delegated funds & other	528,521,000 (12)
contributions from Government of Uganda	582,821,000 (13)
Self generated income	
Projects and donations	3,395,543,000 (75)
<b>Total</b>	<b>4,506,885,000 (100)</b>

New money from outside Gulu area was 87% (government and donor funds).

Over 95% of self-generated income was from user fees, the rest being from the sale of hospital assets (old vehicles, generators, used furniture) and school fees from the nursing training school. The hospital received delegated funds from the central Government of Uganda through Gulu District Local Administration, principally for primary health care (PHC) activities such as community outreaches, health education and purchase of supplementary drugs. The single largest source of external support (over Uganda Shillings one billion) was the Italian Branch of the Piero & Lucille Corti Foundation. Other major donors included United States Agency for International Development (USAID), Austrian Co-operation, Italian Episcopal Conference, Danida, Catholic Medical Missionary Board (USA), Italian Association for Solidarity Among Peoples (AISPO).

The revenue of the hospital was spent as shown in the table below.

**Table 2 Expenditure areas for Lacor Hospital FY 2001/2.**

Expenditure Item	Amount in Ug. Shs. (%)
Employee costs (excluding construction workers)	1,590,160,000 (35)
Capital expenditure:	
* Construction workers (260,878,000/=)	
* Goods and services (689,669,000/=)	950,547,000 (21)
Supplies, goods and services	705,732,000 (16)
Funds earmarked for capital development or activities that extend beyond the end of the financial year	728,815,000 (16)
Transport, plant expenditure & PHC	350,862,000 (8)
Administrative expenditure	100,304,000 (2)
Property expenditure	80,465,000 (2)
<b>Total</b>	<b>4,506,885,000 (100)</b>

**Note:** Employee costs including wages of construction workers was 1,851,038,000/=

Of the Uganda Shillings 1,851,038,000 spent as employee costs, 1,376,510,150 (74%) was spent on salaries, wages and allowances and at least 1,170,033,627 (85%) of this was later retained in the local area. Of the 705,732,000 spent on supplies, goods and services, 429,741,950 (61%) was retained in the area. In this category of expenditure, the respective proportions retained in the area are illustrated in the figure below.

Hospital foodstuffs and building materials formed the bulk of the local purchases, followed by vehicle spares and stationery services. Materials for major renovation and construction of buildings were purchased from outside Gulu district, mainly from Kampala-based factories. Hospital equipment was also purchased from outside the district. All in all, 52% of the total hospital income was spent in the area while 48% was spent outside the district.

(Figure 1, 2, 3)

#### CONTRIBUTION OF LACOR HOSPITAL TO FORMAL EMPLOYMENT IN GULU DISTRICT

We defined formal employment as that which is recognised by the government authorities, is subject to public scrutiny and even taxation should the package of benefits fall within the taxable range. The results are shown in the table below. Considering the health sector alone, there were a total of 996 health workers in the district. Lacor Hospital therefore employed 50% (509/996) of the total district health workforce as illustrated below:

**Table 3 Formal employment in Gulu District, FY 2001/2**

Employment Sector	Number employed (%)
Gulu Independent Hospital	105 (7)
District local government health service	151 (11)
Gulu Regional Referral Hospital	231 (16)
District local government civil service	401 (29)
Lacor Hospital	509 (37)
<b>Total</b>	<b>1,397 (100)</b>

**Note:** In addition to the 509 permanent health workers cited above, Lacor hospital employed 145 construction casual workers.

#### Graduated tax contributions by the different employment sectors in the FY 2001/2.

We also wanted to find out whether the hospital contributes significantly to the earnings of the district, in form of taxes. We chose to analyse only the payments for the graduated tax of the employees, because it is the only form tax which all the employees pay, which is all retained in the district and which is entirely used at the discretion of the district to produce public goods and services such as roads, schools etc. Other statutory deductions like PAYE and NSSF are taken by the statutory bodies of the central government. We observed that Lacor hospital contributed 44% of the Uganda Shillings 32,898,000 raised as graduated tax from the health sector. Due to a prior arrangement between the employees and the hospital management, as a way of motivation to the staff, this graduated tax was directly billed on the administrative costs of the hospital and paid to Gulu Municipality, and was never deducted from the employees.

**Table 4 Graduated tax contributions by the different sectors in Gulu District, FY 2001/2**

Employment Sector	Amount in Ug. Shs (%)
District local government civil service	28,141,000 (46)
District local government health service	16,279,000 (26)
Lacor Hospital	14,426,000 (24)
Gulu regional referral hospital	2,193,000 (4)
* Gulu Independent hospital	0 (0)
<b>Total</b>	<b>61,039,000 (100)</b>

- In the year under study, employees of Gulu Independent Hospital paid graduated tax as individuals in their respective localities. Statutory payment of graduated tax through the employer was to start in the financial year 2002/3.

#### Other benefits for hospital staff

Employee costs amounted to Uganda Shillings 1,851,038,000 (41% of the total hospital revenue) where salaries and wages alone took up to 1,376,510,150 (74% of the total employee costs) and the rest was spent on staff training, travel allowances outside Gulu district, taxes and NSSF contribution. The hospital had an interest free loan scheme for its employees, whose main purpose was to help the staff pay school fees and construct personal houses. Ninety eight percent (98%) of the staff who borrowed, indicated that they intended to use the funds to pay school fees for their children and dependants, presumably within the area. Members could borrow up to 10,000,000/= at any one time and the duration of repayment depended on the individual's ability to pay back. Total membership to the scheme as of 30th June 2002 was at 257 members, of whom 236 (92%) had accessed loans amounting to Uganda Shillings 89,821,100 in 2002 alone.

#### OTHER BENEFITS FOR HOSPITAL STAFF

Employee costs amounted to Uganda Shillings 1,851,038,000 (41% of the total hospital revenue) where salaries and wages alone took up to 1,376,510,150 (74% of the total employee costs) and the rest was spent on staff training, travel allowances outside Gulu district, taxes and NSSF contribution. The hospital had an interest free loan scheme for its employees, whose main purpose was to help the staff pay school fees and construct personal houses. Ninety eight percent (98%) of the staff who borrowed, indicated that they intended to use the funds to pay school fees for their children and dependants, presumably within the area. Members could borrow up to 10,000,000/= at any one time and the duration of repayment depended on the individual's ability to pay back. Total membership to the scheme as of 30<sup>th</sup> June 2002 was at 257 members, of whom 236 (92%) had accessed loans amounting to Uganda Shillings 89,821,100 in 2002 alone.

#### Goods, supplies and services to Lacor hospital

The hospital had no contracted suppliers for any goods or services but procured directly from various retail shops and individuals. Uganda Shillings 705,732,000 (16% of the total hospital revenue) was spent on the purchase of goods, supplies and services and of this, 429,741,950 (61%) was estimated to be retained in the local economy. The leading local suppliers were three Gulu-based companies (Catholic Printing Works, Oreste Company limited, and Jiwani Company) and the three companies took up to 18% (128,389,000/=) of the expenditure on locally purchased goods, supplies and services during the financial year 2001/2002.

#### STAFF REMUNERATION

A total of Uganda Shillings 1,376,510,150/= was paid out to permanent employees and casual labourers as salaries and wages, ranging from 40,000-1,800,000 for permanent staff (modal class 100,001 - 200,000, with 71.5% of employees, mainly nurses/midwives, nursing assistants and other support staff). The salaries were lower than those of government health workers partly because taxes were not included and because the staff union had opted for a reduction in salary rather than retrenchment when the hospital had financial difficulties.

#### Expenditure pattern of employees of the hospital and suppliers

About 96% of the salaries and wages earned by the hospital staff were spent on school fees and feeding. Eighty one percent (81%) of the school fees was paid to schools in Gulu district, the rest being spent on house rent, construction of personal houses, other needs like clothing and savings (3%). Only 1% made their purchases from Kampala, the rest buying from Lacor centre (54%), Gulu town (41%) and Gulu suburbs (4%). The employees of the three main suppliers, a total of 23 people (Catholic Printing Works - 08, Oreste Company Ltd -05 and Jiwani Company -10), earned between 40,000-200,000 Ugandan Shillings per month and spent 53% on school fees in Gulu and 40% on feeding. They all made most of their purchases from Gulu town.

#### OTHER ECONOMIC ACTIVITIES AROUND LACOR HOSPITAL

There were many commercial and social services closely linked to and neighbouring the hospital. Apart from the trading centre of Lacor, there were five primary schools, three secondary schools, one teachers' training college, a kindergarten, a convent, a seminary and a catholic parish center. Some of these investments around Lacor hospital may have resulted from how the local people perceived the hospital as a "ready market" for their services or a source of services or just as something good to be associated with. Retail shops formed the majority (75%) of the business enterprises. We observed a total of 150 small-scale businesses located within a distance of 50-400 meters from the hospital's main gate, most of which had been in existence for a period of 2-10 years. The 43 businesses studied had an estimated total monetary value of up to Uganda Shillings 50,485,000, most with operational capital of about Uganda shillings 100,000 (range: 10,000 to 10,000,000). There were 6 types of business: shops, bars, restaurants, a market, hawkers and taxis. We gathered that businesses in Lacor center developed and prospered because of the existence of the hospital and their clientele were patients, patient attendants, staff and visitors of the hospital. "During the Ebola epidemic, the hospital almost closed and business was really slow", said one of the businessmen interviewed. Over 72% of the staff lived within the hospital quarters or at Lacor center in rented premises and also made the bulk of their purchases from the center. Residents who had lived around for long remembered that there were no commercial enterprises when the hospital was constructed.

#### Perception of the community towards Lacor Hospital

The community appreciated the fact that the hospital offered employment for health professionals and peasants from the community around and that the nurses' training school absorbed mostly locals, who later became employees of the hospital. The hospital's construction, carpentry and masonry departments were training grounds for many of the school dropouts in the community and it was a general feeling that this informal training kept the youth occupied and out of risky behaviors like joining rebel activity and robbery. All the focus groups highlighted the important role of the hospital in offering security to the people, whereby, in order to escape insecurity in their home areas at night, an average of 3,500 people, mostly women and children, trooped to sleep in the hospital compound every night, returning home in the morning. These people made some of their purchases from the center and boosted the local business. The shops and market adjacent to the hospital also benefited from the security personnel at the hospital. Other reported economic contributions of Lacor Hospital included material support to orphans, school fees for needy children and orphans and holiday employment for some school children. Guardians and parents of these children often exchanged their labour for either monetary benefits and/or material support. The immediate communities also accessed clean water from bore holes sunk by the hospital and often, the community provided labour for the construction of these boreholes.

On the contrary, some district officials indicated that the hospital had become too expensive and out of reach for the rural people. One key informant even thought that the hospital had become as expensive as any other profit-making business. Recognising the economic importance of the hospital, they suggested that the hospital could diversify its programmes to include other economic activities like grain milling, vocational training and public construction of buildings so as to create more employment for the area. However, the hospital managers thought that the community did not appreciate these economic contributions. They acknowledged that this may be partially a result of the hospital not informing the community about all its activities and their economic implications. In one of the group discussions, participants suggested that the hospital should find a forum to discuss with the community its plans and objectives. However, general consensus from the group discussions revealed that the community did appreciate the health and economic role of the hospital. Sentiments expressed in the discussions included "If the hospital is not there, how shall we survive?" "Lacor is the umbilical cord, removing it is putting all people of Gulu in problems". "If Lacor Hospital is not there, it is equivalent to a family well drying up"

#### APPLYING THE INCOME MULTIPLIER

In order to determine the total economic impact on the area produced by the investments into Lacor, we first determined the income multiplier. We agreed that since the hospital had no intention to save any of the funds it received in a year, 100% of the funds were to be spent ( $x = 1.00$ ). Since 99% of income of the hospital employees and 93% of the income of the employees of the suppliers to the hospital was spent within Gulu, we made an average of these two and came up with 96% as the average percentage spent by staff within the area ( $y = 0.96$ ). The hospital itself spent 52% of its revenue within the area ( $z = 0.52$ ). Using the formula cited from Coppedge earlier, we determined that the income multiplier for the health sector in Gulu area, for a PNNF hospital was 1.9968. This meant that for every dollar spent in the area for health, 1,9968 dollars would be obtained, a net effect of 0.9968 dollars. Thus for Lacor Hospital which had a direct impact of Uganda Shillings 4,506,885,000 a total impact of Uganda Shillings 8,999,347,968 would be realised within no more than 6 years, a net effect of Uganda Shillings 4,492,462,968 as indirect impact, most of which would be realised in the first year.

#### DISCUSSION

The study shows that Lacor, like other health institutions has an importance way beyond its 'natural constituency' of health care. It has a significant direct economic impact on the surrounding area. By way of external funds attracted to the area, local health care funds retained and employment created, the hospital is indeed an engine of economic growth for the Gulu area. The hospital attracted Uganda Shillings 3,920,989,950 as 'new money' coming into Gulu from outside the area. Together with the local money, a total impact of Uganda Shillings 8,999,347,968 could be realised in the area surrounding the hospital within a six year period. This means that continued presence of the hospital will continue to bring about development in the area since more money will continue to flow into the hospital.

The fact that the government of Uganda contributed Uganda Shillings 528,521,120 as Delegated Funds is important not only for the running of the hospital but for the local economy as well. The hospital serves as a 'magnet', attracting funds to the area and ensuring that Gulu partakes of the 'national cake'. This constituted an economic exchange between the government and a private institution and through this, the hospital is also helping the government achieve part of the objectives of the Poverty Eradication Action Plan (PEAP). Some of the funds received are used to subsidise the services so that they can be accessible to a larger section of the population. One of the government's intentions is to eventually have the user fees charged by the hospital significantly reduced so that the local community may then spend less on health care and put their income in other areas of developmental expenditure. Moreover, by supporting the hospital, the government is providing the youth with an avenue for gainful employment and engagement in peaceful activity.

In agreement with Dever et al. (2000) who noted that hospitals are large employers in their locality, Lacor Hospital was the largest employer in Gulu district. Surprisingly, it employed even more than the education sector which was noted to be usually the highest employer. This could be attributed to the insecurity which has severely affected life in the more rural areas of the district, such that health units, schools and other social services are not operational.

The hospital management has taken a number of measures to mitigate the financial constraints on its staff like paying for them graduated tax, NSSF contribution (both the employer's part and the employee's part), PAYE income tax and initiating an interest free loan scheme. All these measures were aimed at ensuring that the employees get a significant take-home package, thus empowering them to spend even more in the local economy. Therefore the hospital enabled them to support the creation of other rounds of spending in the local economy, reflected in the business activities seen in the area. Though the hospital spends 52% of its revenue in the area, more could still be spent within if the business community of Gulu took up the challenge to analyse the needs of the hospital and try to meet them in terms of range of services, quality, quantity, timeliness and price. We think that the business community should be capable of tapping more of the money spent on fuel, drugs, building materials, stationery and other generic supplies. Probably, more interaction between the hospital management and the business community needs to take place so as to discover each other's needs, preferences, requirements and capacities.

Lacor hospital made a significant contribution to the total district graduated tax collection but Gulu district local government did not make any direct monetary contribution to the running of the hospital activities. Local taxes are spent on creating public goods and services like roads and schools and this helps to strengthen the area economically. Lacor Hospital is designated as a parish and, according to the Local Government Act, 25% of all locally collected taxes should be refunded by the district to the collecting parish. We noted that this was not being done in the case of Lacor. Were it to be done, Lacor would be receiving from the district an annual refund of Uganda Shillings 3.6 million for local social development. Probably by now, the bitumenising of the road between the hospital and Gulu Municipality or another project of similar magnitude and importance would have been implemented.

There is strong evidence that Lacor Hospital has played and continues to play a key role in the establishment of small-scale businesses in the surrounding community. Considering that their customers were patients, patient attendants, visitors and staff of the hospital, it can be assumed that the hospital indirectly contributed to the development of the businesses. Studies have shown that the presence of a health care institution in an area may result in the attraction and retention of businesses. In the study of the economic impact of Johns Hopkins university hospital in Maryland, it was found that a number of businesses sprang up because of the presence of the university hospital. These businesses contributed up to six billion dollars in economic activities in that area. In all areas where opinions were sought about the economic contribution of Lacor Hospital, there was a strong consensus that the hospital did contribute to the economy of the area although this feeling was not captured by the hospital management. The study established that the community did appreciate the economic and health roles of the hospital more than the top managers realised.

The feeling by the population that the user fees charged were too high and that the hospital was behaving like a profit making enterprise couldn't be ignored and could be due to the extreme poverty obtaining in the area, whereby even fees that would be very low in other parts of the country are deemed to be too high here. What remains to be seen is whether the total economic impact from the hospital is transformed into a visible improvement of the livelihood of the population but this cannot be anymore a role for the hospital.

#### CONCLUSION

In the financial year 2001/2002, St Mary's Hospital Lacor attracted Uganda Shillings 3.9 billion 'new money' into the Gulu area and out of its revenue of Uganda shillings 4.5 billion, injected at least 2.3 billion (52%) in the local economy. A total impact of Uganda Shillings 8.9 billion is anticipated as a result of this investment. The hospital, with a staff of over 600 people, was the major single employer in the district and, with over 95% of its staff hailing from Gulu District, and many others training in various skills, is a major developer and consumer of the local human capital. This is a significant contribution to the economy of an area that has been destabilized by insecurity for a long time, bringing most economic and social activity to a standstill.

The hospital is an important attracting factor for development in the area and is an opportunity for the local community to access the 'national cake' of resources. However this importance is not reflected in the relationship between the hospital and the local district administration and between the hospital and the business community of the area. The local administration does not make its part of the contribution to the hospital by repatriating the hospital's share of local taxes and the business community does not take adequate advantage of the presence of the hospital to meet its material needs so as to retain a bigger part of the current leakage of would-be local revenue from the hospital.

The relatively large population of hospital staff, patients, attendants and visitors provided a ready market for the businesses around the hospital and, together with the hospital's direct tax contribution, the businesses provided a good tax base for the district. Despite being a PNNF hospital, Lacor served as an important magnet for external resources to the Gulu area and served the needs of both the people and the government thus further lending credence to the importance of the public-private partnership for health. Further support for and investment into the hospital from either the external donors, the local administration in Gulu or the central government of Uganda is good business, guaranteeing a good return on investment (ROI) either in form of increased access to health services for the poor, increased share of the 'national cake' or peaceful activity, whose effects will be felt in the entire national economy.

#### RECOMMENDATIONS

1. The hospital management could advocate for further support for the hospital from the donors, the central and local governments, basing on the role of the hospital as a major economic engine in the district as an additional criterion to being a leading provider of quality services in the marginalized area.
2. Interaction between the hospital management and the local (especially business) community needs to be further enhanced in order that the true economic significance and difficulties of the hospital to the community may be elaborated.
3. The true impact of the hospital on employment in the area needs to be studied better in order to see what effect the hospital has on the overall level of employment in the district.

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