

Influence of Community Financing Health Insurance Schemes On In-Patient Care In Ghana: The Case Of Nkoranza Scheme

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Abstract

With the introduction of “cash and carry” system in the health sector in Ghana in 1985, it became difficult for many people to afford orthodox health care. In Nkoranza district, this problem manifested itself in low attendance of in-patient care (admissions) at St. Theresa’s Hospital (the only hospital in the district, a Catholic hospital). In addition, some of the patients who were hospitalised absconded after treatment because they could not afford to pay their medical bills. Consequently, in 1989, at Catholic Diocesan Health Committee (DHC) meeting at Sunyani, it was suggested that a community financing health insurance scheme be established in the district in order to reduce the hardship of the people in seeking in-patient treatment. The scheme was launched and became operational in 1992. The objectives of this study was to examine the impact of the scheme on in-patient healthcare services at the health facility in the district. It became evident from the study that insured in-patient attendance at St. Theresa’s Hospital from 1992 to 1998 increased with the scheme, constituting 52% of total admissions within the period.

Keywords: cash and carry system, community financing health insurance, patronage, impact, in-patients

1. Introduction

Generally, the level of productivity, quality of life and life expectancy of a people depend on their health situations. In Ghana, about 89.2% of the sick people receive a form of treatment, either orthodox or traditional. According to Ghana Statistical Survey Report (1997), about 33.3% of sick people in Ghana did not use medical services because they could not afford them, during the “cash and carry” system between 1985 and 2005. This phenomenon was not limited to rural folk, but also the urban poor, as evidenced by high infant and maternal mortality, prevalence of infectious parasitic diseases and poor nutritional standards in the country. According to Interagency Group Child Mortality Estimation (IGME), the under-five mortality rate in Ghana has decreased from 122 in 1990 to 74 per 1000 live births in 2010, but it is still high as it is almost over double the average of 20 OECD Asian countries with 26 deaths per 1000 live births (2010 Ghana Millennium Development Goals Report, Nov. 2012; Health at a Glance, Asia/Pacific, OECD Library, 2012). This trend is usually accounted for by inadequate budgetary allocation to the health sector, great inequality between urban and rural incomes, in addition to differences in access to health care. The primary health care programmes that mainly target the rural people normally received less proportionate share of the government health budget. (Asenso-Okyere, 1995, p. 86). The story may not be different for most African countries as evidenced by health statistics. Pregnancy related mortality rate among Africa women is 1 in 16 during pregnancy or childbirth, sharply contrasting developed countries with just 1 in 4,000. (AFDB, June 2013, web)

1.1 Background

In order to make public health institutions self-financing, the Government of Ghana by Legislative Instrument introduced a law establishing a full recovery of drug costs and hospital fees (aka cash and carry system) as part of its quest to promote economic recovery under the Structural Adjustment Programme (SAP) in early 1980s

(Nordor, 1994). After the introduction of the cash and carry system, studies showed that attendance at health facilities dropped. Attendance at urban facilities picked up later, however, that of the rural facilities did not return to its previous level (Asenso-Okyere, 1995). In 1985 it was observed by St. Theresa's Hospital of Nkoranza district that attendance at the facility was plummeting, especially the in-patient attendance resulting in high death rate; and an escalation of unpaid medical bills, as some people absconded after receiving treatment, or did not seek orthodox medical treatment until their health conditions became very critical. In order to save lives and the hospital from bankruptcy, a community financing health insurance scheme was proposed in 1989 at a Catholic Diocesan Health Committee (CDHC) meeting at Sunyani to be established for the district, the first of the kind in the country. This idea was welcomed by the management of the hospital, the District Secretary (PNDC era) and the District Health Management Team. The first two years were used for a series of consultations and background study after the approval by regional and district political authorities. The Scheme was formally launched and became operational in 1992.

Nkoranza district is one of the thirteen (13) administrative districts of the Brong Ahafo region of Ghana. The predominant economic activity in the district is agriculture, which employs about 95% of the labour force. The estimated average annual household income/expenditure of the district in the 1990s was about US \$48 (Nkoranza district Development Plan, 1996). As at 1994, based on the growth rate of 3% per annum as per 1984 population census, the district had a population of about 127,877; and females constituted 51% and males, 49%. The average household size of the district was 7.22 (ibid). The district has only one hospital, which is the St. Theresa's hospital in Nkoranza town.

1.1.1 The Assumptions and Objectives of the Scheme

The stakeholders of the scheme had an assumption that admissions at the hospital (St Theresa's hospital) in the era of cash and carry system was dwindling because people could not afford the (high) cost involved. It was assumed that with the scheme in place the trend would change. The Scheme therefore had the following objectives:

1. To encourage the people of Nkoranza to pool financial resources together with the view to sharing the risk of in-patient bills.
2. To improve the economic accessibility of the population of the district to curative care by making in-patient healthcare accessible and affordable to all.

1.1.2 Membership and Benefit Package of the Scheme

Membership of the scheme was voluntary; and all residents of the district were eligible, including students schooling outside the district. Registration was done once a year in order to avoid adverse selection. Entire family or household had to register and a family card would be provided (in order to avoid adverse selection and minimise moral hazard). "Persons living alone were also allowed a single registration" (Insurance Manager's presentation document, p 4). Individual membership cards, duly signed were issued as evidence of full payment of a flat rate of premium (irrespective of age and sex). The scheme covered only bills of admission at St. Theresa's hospital for 24 hours and beyond.

1.2 Statement of Problem

After the inception of Nkoranza scheme in 1992, it continued to operate to as a community scheme until the nationwide one became operational in 2005. It run for seven years before the news about the national insurance programme became public, and it became a reference to most advocates of health insurance and planners of the nationwide institution. It is important therefore, to analyse its experience in terms of impact so as to provide lessons for any future community financing health insurance schemes, anywhere in Africa as Ghana national health insurance programme learned a lot from it at planning and design stages, and might partly account for the success story of the national schemes. The impact the Nkoranza scheme had on the in-patient health care in the district was the main focus of this study.

1.3 The Purpose of the Study

The purpose of the study was to assess the impact of the scheme on in-patient attendance at St. Theresa's hospital in Nkoranza. The hypothesis that guided the research was—admission (in-patient care) in the district increased after the introduction of the scheme.

2. Theoretical Framework and Empirical Review

2.1 Theoretical Framework

From a theoretical perspective, having an insurance coverage could affect individual behaviour through several distinct mechanisms. In the first place an individuals may feel safer with insurance, becoming less risk sensitive thereby creating a problem commonly referred to as the moral hazard in economics. Secondly, insurance may affect the choices individuals may make of medical treatment when the need arises. A rational individual may feel that insurance makes formal treatment cheaper in comparison with other treatment modalities, and thus induces a shift towards increased service utilisation, leading to better health and life. Lastly, individuals may want to make use of their insurance policy so as to recover parts of the insurance premium already paid, a behaviour which is inconsistent with models of rational choice well explained by Kahneman and Tversky in their prospect theory (Blanchet, N. J., et al., 2012; www.princeton.edu, October 15, 2013, 3:44am).

2.2 Empirical Review

The Hospital Fee Regulation Legislation could not provide sufficient funds to improve and expand the health services in Ghana; and same applies to other countries, especially those of Africa that have undertaken reforms in their health sectors. There has therefore been a felt need to find a supplementary sources of funding for good health care delivery. Health insurance has been identified as an institution with the potential to provide sufficient supplementary funds for health services delivery (Bennet et al., March 1994). “Insurance is a way of financing health service by spreading the risk evenly among policyholders” (Asenso-Okyere, 1995, p 89). It is “a means of financial protection against the risk of unexpected and expensive illness” (Kutzin, 1995, p.17). The fundamental rationale for insurance is that of risk sharing and spreading; because health care expenditure is by its nature often unexpected and potentially large. Insurance with its large pool of fund is the facility to use to deal with such exigencies. It is difficult to predict an individual medical bills, but that of a large group is statistically predictable (Bennet et al, March 1994). Social or community-financed health insurance by their nature and benefits could be a safety nets for the poor who are more vulnerable to illness and diseases.

However, few African countries appear to have made explicit efforts aimed at increasing efficiency through the development of health insurance. For instance, in sub-Saharan Africa, the desire to develop health insurance schemes has become prevalent during the past decade purposely to generate a reliable source of extra revenue, but only a few have been able to develop and run one. It is believed that by sharing the cost of care through insurance schemes, between the healthy and the sick may substantially raise cost recovery ratios. Insurance has a social solidarity function; it is possible for the wealthy to subsidise the poor and the healthy to subsidise the sick (ibid). There are many different types of insurance schemes developed, but the most popular are social health insurance, employer based insurance, community financing insurance and private health insurance schemes. For the purpose of this research we would discuss only community financing schemes.

2.2.1 Community financing Health Insurance Schemes

The community financing health insurance schemes are locally organised by communities with premium paid by households, covering both those in formal and informal employment. Due to the limited coverage of the formal sector health insurance schemes, many countries have been induced to consider alternative community based insurance schemes. Such schemes are well established in Guinea Bissau, Burundi and Zaire. Kenya and Ghana had pilot schemes (in Nkoranza and East Gonja districts in case of Ghana) before the experienced was translated into developing a nationwide programmes. We now look at few of locally-based schemes in Africa and Asia.

In a bid to achieving the Millennium Development Goals number 4-6 which are health related, action is being taken on the African continent to establish health insurance schemes so as to reduce out-of-pocket spending especially by the poor and ensure that the health sector is sustainably funded (WHO, 2013). Countries like Ghana, Rwanda, South Africa and few others (discussed below) have started to introduce universal healthcare coverage.

Ghana’s programme is aimed at addressing the problem of financial barriers to health care access within the context of the Ghana Poverty Reduction Strategy (GPRS) (SEND-Ghana, 2010). Since the beginning of its operation in 2005, the enrollment of the programme has significantly reduced out-of-pocket payments by eliminating the cash and carry system to a high degree and protected households against high unanticipated healthcare cost (AFDB, June 2013, web). Preparation for the South Africa National Health Insurance programme is underway and is meant to ensure that all South African citizens and legal residents benefit from

healthcare financing package. The programme has taken off with pilot projects in ten districts of the country, and will be implemented in three phases within 14 years, according to the government. (janssen-emea, 12/10/2013, web)

In Guinea Bissau, the set-ups are voluntary levy schemes at village level, called 'Abota' which started in 1980 with comprehensive benefit package. As at 1988 the scheme had covered 20% of the population and by early 1990 it had risen to 75%. Initially, the schemes were financed by voluntary contributions made by adults but over the years fairly standard rates are paid in each village. Village health committees are in charge of the administration of the schemes. The revenues are used to cover only cost of drugs purchased by 'policyholders.' Community Health Workers render health services and referrals are made to other government health facilities (Bennet et al, March 1994).

In the Democratic republic of Congo, (formerly Zaire) the scheme is voluntary and operative only in Bwamanda health zone; approximately 65,000 people had been covered by the scheme. The Bwamanda insurance plan covers hospitalizations, including deliveries, dental extractions, and outpatient surgery at the public health facilities and the health providers administer the scheme (ibid).

Burundi also runs community based comprehensive voluntary health insurance schemes, which are financed from flat premiums paid on household basis. The number of people so far covered is not known but it has been found that in one area 23% of the population was covered by 1994. Public providers deliver health services but local administrative bodies are in charge of managing the schemes.

In Thailand health card scheme was introduced in rural areas so that those who purchased a card were entitled to free medical services at first contact facilities and referrals as might be needed at higher levels, again with no cost-sharing (Kutzin 1995). Though these voluntary schemes are beneficial in creating access for enrolled population, it is noteworthy that those who are too poor to pay the annual premium were cut out by the schemes.

It is apparent from the above experiences of community based health insurance schemes that such schemes unlike the social insurance schemes, tend to be voluntary since it is difficult to enforce membership amongst rural population. However measures have been put in place by some schemes to guard against adverse selection; Bwamanda scheme in Zaire and the Abota scheme in Guinea Bissau have taken such a measure (Shepard et al., 1990; Chabot et al., 1989). With the 'Zairean' scheme if one member of a household joined, then all must compulsorily get insured.

3.0 Research Method

The hypothesis the research sought to test relied on secondary data which were taken from the files, registration notebooks and reports of the insurance scheme on admissions (in-patient care) before cash and carry system, during cash and carry and after the introduction of Nkoranza community financing health insurance. Students' t-test was used to analyse the significance of the differences in total admissions numbers during cash and carry system and after the inception of the health insurance by testing the differences in means of admissions for the two periods. Chi-square test was used to test for differences in groups (insured and non-insured) to establish the influence of the scheme on admissions. Bar and pie charts, and tables were used in the presentation of the findings.

4.0 Results and Findings

The composite objective of the scheme was to pool resources together to improve the access of the population to "curative care by making health care... affordable" (1998 Annual Report of the Nkoranza Community Financing Health Insurance, p. 1). As noted earlier, it was assumed that the low level of in-patient attendance at the St. Theresa's Hospital was due to inability to pay admission bills at the hospital following the introduction of the cash and carry system in the health sector of Ghana. The introduction of the scheme was expected to improve in-patient health care in the district. Attempts were made to find out whether the scheme has had a positive impact on in-patient attendance in the district by testing the following hypothesis.

Test of Hypothesis

H₀: Admissions did not increased after the introduction of the scheme

H₁: Admissions did increased after the introduction of the scheme

Table 1. Calculation of Students' 't' on the Impact of the Scheme on Admissions (1992-1998)

't' calculated	19.5
Critical value of 't' at 5% significance level	4.575

(Detailed calculation can be found in Appendix A)

The test result in table 1 indicates that 't' calculated is greater than the critical value of 't' at 5% level of significance; we therefore reject the null hypothesis that admissions have not increased after the introduction of the scheme. In other words there has been more admissions after the introduction of the health insurance scheme in the district than the previous six years, when cash and carry system was introduced. Table 2 below depicts the pattern of in-patient (both insured and non-insured) at the St. Theresa's hospital before and after the introduction of cash and carry system, and after the inception of the scheme in the district.

Table 2 Trend in In-Patient Numbers 1981-1998

Before Cash & Carry			During Cash & Carry			With Scheme: Total Admission Nos.			Scheme Client Nos.	
Year	IP No.	% change	Year	IP No.	% change	Year	IP Nos.	% change	Share of insured admission	% of insured admission of total admission
1981	432	-----	1986	2496	20.5	1992	3907	23.6	1899	48.6
1982	1154	257.2	1987	2725	9.2	1993	3670	-6.0	2327	63.4
1983	1614	39.9	1988	2882	5.8	1994	3200	-12.8	1635	51.1
1984	1533	-5.0	1989	2761	-4.2	1995	2976	-7.0	1289	43.3
1985	2071	35.1	1990	3150	14.4	1996	2912	-2.2	1396	47.9
----	-----	-----	1991	3160	0.06	1997	3422	17.5	1687	49.3
----	-----	-----				1998	3650	6.7	2187	59.9

Sources: 1. Health Services Report of Nkoranza District for 1985, 1988 and 1993.

2. St Theresa's Hospital Admissions Records 1981- 1998.

Information on table 2 indicates that before the inception of cash and carry system, the in-patient admission was generally on the increase; it increased by 257.2% in 1982. It continued to increase in 1983, however at a decreasing rate; and fell in 1984 by 5%. Data for periods before 1981 were not available. Since 1985 when the cash and carry system was introduced in the health sector, in-patient admission at St. Theresa's hospital continued to increase, however at a decreasing rate and fell by 4.2% in 1989. It began to increase in 1990 by 14.4% and again increased at a decreasing rate of 0.06% in 1991. Despite these increases a lot of patients after treatment could not afford the bills and some abscond to evade the payment, hence the proposal of the scheme.

With the introduction of the community health-financing scheme in 1992, the in-patient admissions increased by 23.6% in the first year and thereafter began to fall until 1997 when it began to increase by 17.5% and 6.7% in 1998. This trend is due to fluctuations in both insured and non-insured numbers (see table 5 in appendix B). This phenomenon could be due to inability of some people to afford the premium. From table 2 it can be realised that the share of insured admission has been fluctuating between 1992 and 1995. Insured admission did pick up in 1996 and continued on the ascendancy with greater percentages as shown on the table.

4.2 Comparison of Insured and Non-insured Admissions

It was expected that most people would enrol in the scheme, which would lead to a greater percentage of insured admissions than the non-insured admissions at the St. Theresa's hospital. The following hypothesis was therefore set to find out whether the scheme influences admission at the hospital.

Test of Hypothesis

H_0 : The scheme did not influence admission

H_1 : The scheme did influence admission

Table 3. χ^2 Calculation for Influence of the Scheme on Admissions (1992-1998)

χ^2 calculated	375.5
Critical value at 5% level of significance	1.145

(For detailed calculations see Appendix B)

From the result of test of hypothesis depicted in table 3, we reject the null hypothesis that the scheme did not influence admission. This means that the insurance scheme did influence admission as indicated by the higher value of the χ^2 calculated than the critical value of χ^2 ($\chi^2_{cal} 375.5 > \chi^2_{critical} 1.145$). It could be that those who have insurance cover visited hospital anytime they fell sick since affordability would not be a problem when it becomes necessary for them to be admitted. The level of insured admissions has indeed been quite impressive though not as high as expected. Even though the insured admissions had been fluctuating (as evidenced in figure 1) over the period under consideration, insured admissions account for more than 50% (52%) of total admissions as depicted in figure 2 below.

Figure 1: Comparison of Insured and Non-insured Admissions

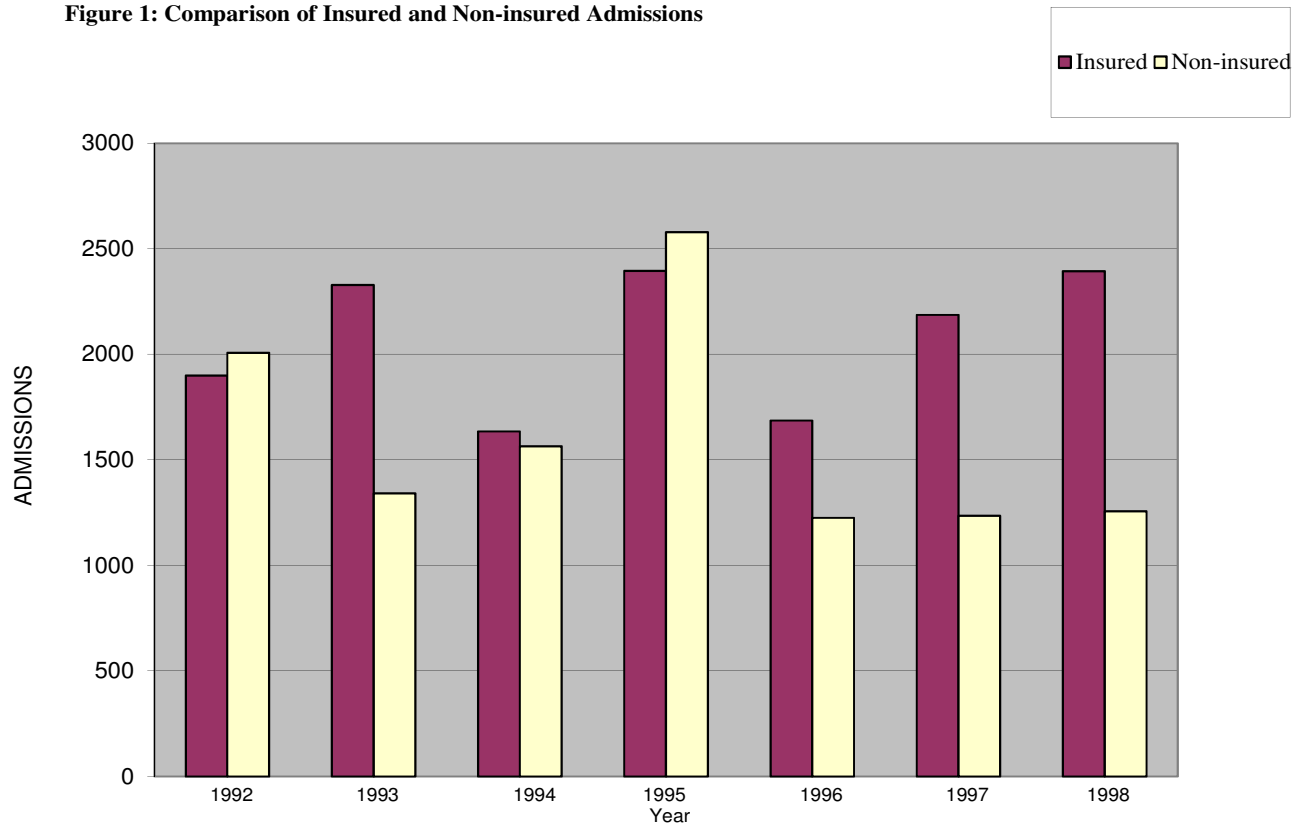
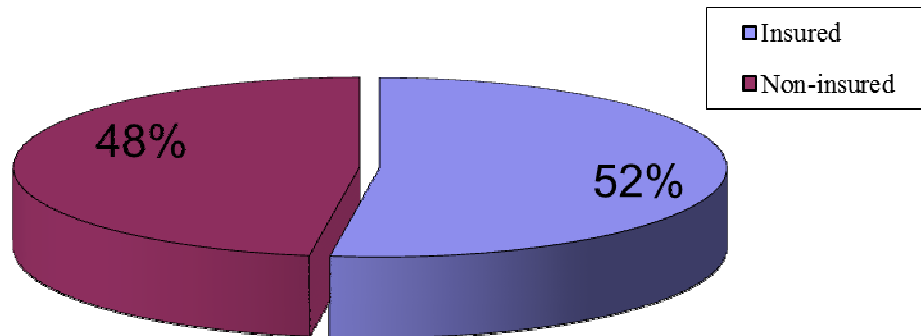


Figure 2 Comparison of Insured and Non-Insured Admissions 1992--1998 (Totals)



4.0

Conclusion

From the findings it is evident that the scheme influenced admissions at the St. Theresa's hospital. The cash and carry system introduced in the 1980s scared away people from using in-patients health care as most people could not afford high cost of such treatments. The comparison of in-patient numbers before and during cash and carry system, and after the introduction of the community health insurance shows differences between the first two eras and the last époque. This trend is in line with Blanchet et al., (2012) theoretical propositions that insurance makes formal treatment cheaper in comparison with other treatment modalities, and thus induces a shift towards increased service utilisation; and also individuals may make use of their insurance policy so as to recover parts of the insurance premium already paid hence the increased number of in-patients at St. Theresa's hospital after the inception of the health insurance scheme in the district. Insured admission constituted 52% of the total admission at St. Theresa's hospital from 1992 to 1998.

5.0 Recommendations

Community financing health insurance schemes at local levels are feasible, beneficial and manageable and this can be replicated in many parts of rural Africa. Many African countries do not have national health insurance programmes due to financial constraints; such governments could encourage and support local level scheme initiatives until such time that nationwide institution could be put in place to guarantee universal enrollment. These local schemes could serve as pilots for future national programmes so that many planning and implementation risks could be identified and managed at the very onset.

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Appendices

Appendix A

Table 4: In-patient Numbers during Cash and carry and after the introduction of the scheme: Data Collected

During Cash & Carry (Before Scheme) X_B	With Scheme X_A
1986---2496	1992---3907
1987---2725	1993---3670
1988---2882	1994---3200
1989---2761	1995---2976
1990---3150	1996---2912
1991---3160	1997---3422
Xxxxxxxxxx	1998---3650
Total= 17174	Total= 23728
$X_B= 2862$	$X_A= 3390$

Statistical tool used: Students' T test

$$T = \frac{X_A - X_B}{S_{X_A X_B} \sqrt{\frac{1}{n_a} + \frac{1}{n_b}}} = \frac{528}{27} = 19.5$$

Note that n is sample size but we substitute n_a and n_b for n for the two sample data

$S_{X_A X_B}$ is an estimator of the common standard deviation of the two samples

Appendix B

Table 5: Insured and non-insured Admissions- 1992-1998: Data Collected

Year/Item	1992	1993	1994	1995	1996	1997	1998
Insured	1899	2328	1635	1289	1396	1687	2187
Non-insured	2008	1342	1565	1687	1516	1735	1463

Statistical tool used: Chi-square (X^2)

Degree of Freedom (df) = $X^2 (r - 1) \times (c - 1)$; where r = row; c = column

$$df = 6$$

$$x^2 = \frac{\sum(O_{ij} - E_{ij})^2}{E_{ij}}$$

where O = observed value

E = expected value

i = row

j = column

$$\text{Matrix for } x^2 = \frac{\sum(O_{ij} - E_{ij})^2}{E_{ij}}$$

Insured	10.0	87.0	0.9	46.0	10.6	5.9	40.5
Non-insured	11.0	95.0	0.9	50.6	11.6	6.5	44.0

$$X^2 = 10.0 + 87.0 + 0.9 + 46.0 + 10.6 + 5.9 + 40.5 + 11.0 + 95.0 + 0.9 + 50.6 + 11.6 + 6.5 + 44.0$$

$$X^2 = 375.5 \quad X^2_{.05, 6} = 1.145 \quad X^2 \text{ cal} > X^2 \alpha, \text{ df}$$

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