

THE ROLE OF NATIONAL HEALTH INSURANCE SCHEME IN HEALTH CARE DEMAND IN JOS CENTRAL NIGERIA

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***Abstract:** Individuals with health insurance consume more health care commodity; one of the so many reasons is because the health care commodity now becomes cheaper for such individuals. Health insurance which influences health care price obviously affects health care demand. Nigeria is faced with low health status amidst poverty and these two can be very devastating. Cognizance of this, the government saw the need to increase health care access for the poor by reducing health care cost. National Health Insurance Scheme (NHIS) was introduced in Nigeria by the government in order to increase health care access of Nigerians. NHIS however, targets public sector workers and/or those in formal sector. NHIS has only enrolled 3% of Nigerians under the formal sector health insurance program (Anyene, 2012). 70.8% of Nigerians live below the poverty line and cannot afford health care costs, meaning a chunk of Nigerians are left without any form of coverage, the funds disbursed by NHIS therefore focuses mainly on richer Nigerians thus, widening the rich/poor gap. This study assessed the role of NHIS in influencing health care demand in Jos, Nigeria. A random sampling technique was adopted in administering 200 questionnaires to NHIS participants in Jos metropolis. The information sourced via the questionnaires among others include: age group, NHIS status, commencement of contribution and its nature, comparison of health care level of demand before and after NHIS, NHIS cost reduction and direct price effect, NHIS cost reduction and moral hazard. This research is descriptive; techniques used include tables and chi-square statistics. Results from the study revealed that NHIS focuses on the employed; the scheme has not significantly increased health care demand and of course has no direct price effect on health care demand in Jos, Nigeria. It is recommended among others that funds diversion may explain why participants do not feel the scheme's impact, thus, these funds require a serious checkmate, the informal sector comprising a chunk of the Nigerian poor have to be captured however, economic empowerment is vital to its success, a health care consumer protection agency is needed which will make NHIS more responsible, enrollment should not be made compulsory by organizations for now since the scheme is still finding its footing.*

Keywords: Health Insurance, Health Care Demand, Price Effect, Moral Hazard.

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INTRODUCTION

Economists often emphasize that demand should not be confused with need, desire or want. The need, want, or desire for a good or service that is backed-up with the willingness

and ability to pay is what they termed as demand. Obviously, in a country like Nigeria where poverty is still a major problem and diseases are enormous, the need or want for health care would be high but the demand may not be as high due to the willingness and ability to pay. It is this gap that NHIS intends to bridge.

Increases in health care demand as a result of health insurance could be explained by the following:

1. Individuals that buy health insurance package are more likely to be those who anticipate greater need of health care. What Economists termed as adverse selection.
2. That which could not be consumed due to price now becomes affordable and accessible. This is direct price effect.
3. Because the price is now reduced, individuals consume some health care commodities which they wouldn't have consumed, i.e. they will consider such consumption as unnecessary or needless if they are to pay fully. This is termed Moral hazard. Both 2 and 3 are as a result of direct price effect. But 2 above may not have element of moral hazard.
4. Insured individuals may get involved in risky behaviours that are inimical to health which could worsen their health problems leading to more requirements for health care. This is what Dong, (2011) termed as behavioural moral hazard.

Although all these could emanate as a result of the introduction of health insurance, this research attempts finding out the effect of health insurance on health care demand focusing on the direct price effect of the insurance. The research assesses the role NHIS plays in increasing health care demand in Jos, Nigeria. It specifically finds out if health insurance encourages individuals to consume what they would not ordinarily consume with/without the ability to pay for the health care commodity. This will reveal to us the direct price effect of health insurance including moral hazard.

The null hypothesis 1, is: NHIS increases health care demand in Jos. Null hypothesis 2, is: NHIS' cost reduction has a direct price effect on health care demand in Jos. The objectives are: to find out the role NHIS plays in influencing health care demand in Jos, to find out if the effect of NHIS on health care demand is purely the direct price effect, or there is some element of moral hazard, and finally to make recommendations based on the findings. The research questions: does the cost reduction in form of NHIS encourage health care consumption? Does the cost reduction lead to moral hazard or it merely has a direct price effect? Do the insured want to pull out of the scheme or want it abolished? The paper is therefore divided into 4 parts as introduction, literature review, data analysis, and conclusion/recommendations respectively.

LITERATURE REVIEW

It is established in health economics that the demand for health care is a derived demand from the demand for health. The dictionary central explains that health care demand is the maximum rate of use of health service facilities as a function of various independent variables like health status, price, distance from facility; time spent obtaining the service, income, wealth and educational attainment (Dictionary Central, 2012). It is further defined as the amount of health services that the people are willing to obtain as a function of the service prices, given people's socio-economic and demographic characteristics, their perception of the quality of services, the people's geographical location relative to health providers and the environment (Collins *et al.*, 2006). Holding other factors constant, health care demand basically has to do with the relationship between the consumption of health care service and its price.

The concept of health insurance on the other hand, has to do with the type of insurance coverage that covers the cost of an insured individual's medical expenses. Health insurance therefore helps to protect an individual from high medical care costs. Thus, National health insurance insures a national population for the health care costs. It may be administered by the public or the private sector or a combination of both. National health insurance is usually instituted as health reform and is therefore enforced by law.

One of the goals of Nigeria's health sector reform is to improve access to health care and also to make it affordable. So the goal is tackled through the provision of primary health care which is being implemented by all the tiers of government as well as the national health insurance scheme (NHIS). Though the idea of a national insurance was conceived in 1962 under the Halevy's Committee's Lagos Health Bill and it was only promulgated in 1999 and launched in 2005.

NHIS has about 10 objectives out of which are: to ensure that every Nigerian has access to good health care services, to protect families from the financial hardship of huge medical bills, to limit the rise in the cost of health care services, etc. Nigeria has both formal and the informal sectors, in order to avoid the exclusion of others; the scheme comes in a package of six components:

- The Formal Sector Social Health Insurance Program
- The Urban Self-employed Social Health Insurance Program
- The Rural Community Social Health Insurance Program
- The U-5 Children's Program
- Prison Inmates Social Health Insurance Program.

Its structure reveals the following bodies

- The council
- State licensure boards

- State health insurance offices
- Standards committee and inspectorate systems
- Health maintenance organizations
- Health insurance companies (public and private)
- Arbitration boards
- Malpractice insurance schemes
- Banks and Banking systems
- Tribunals.

Funding is pooled from enrollee's 5% basic monthly salary, while 10% of the enrollee's basic salary is contributed monthly by the employer (NHIS, 2005). The insured chooses his primary health care provider who is associated with the HMOs. Onyebede, Goyit, and Nnadi, (2012) explained that the primary health care provider is to be registered by the NHIS according to the guidelines of the standard committee made up of statutory professional registration boards. State licensure boards approve premises for practice by the health care provider. Liability insurance companies (public and private) will provide professional indemnity cover (malpractice insurance) for the health care providers. The role of the arbitration boards will be to handle conflicts between the above relationships.

Furthermore, the Health Maintenance Organizations (HMOs) are limited liability companies which are licensed by the NHIS to facilitate the provision of health care benefits to contributors under the formal sector social health insurance program to interface between eligible contributors including voluntary contributors and the health care providers. NHIS in Nigeria is bedeviled with a lot of problems. Anyene, (2012) pointed that NHIS appears to be a free scheme operating only with government's contributions. Tolu-Kusimo (2013) identified the following problems of the NHIS in Nigeria:

- That many corporate bodies are withdrawing from the scheme owing to the fact that their staff were not getting adequate treatment from the NHIS accredited hospitals.
- That doctors can't be blamed for this because apart from the fact that HMOs do not pay capitation as and when due, the poor capitation and other incentives paid to these hospitals limit patient care.
- The major problem of the HMOs is that many hospitals complain of non-payment of the bills of patients that they have treated for HMOs.
- The clients complain that many diseases are not covered and they are given substandard drugs.

- Many of the clients still spend out-of-pocket to finance their health bills.

Grossman, (1972) provides the genesis of the determinants of health care demand. He explains that the demand for health care is derived from the demand for an optimal health stock in each period, with current health stock, depreciation and investment in health care being the determinants of future health stock. He views each individual as both a producer and a consumer of health. Health is treated as a stock which degrades over time in the absence of investments in health, so that health is viewed as a sort of capital. The model acknowledges that health care is both a consumption good that yields direct satisfaction/utility and an investment good that yields indirect satisfaction through increased productivity, fewer sick days and higher wages. This suggests that investments in health could lead to the improvement of health status and reduction of poverty. This is very important to developing economies like Nigeria.

Phelps and Newhouse, (1974) modeled the behavior of a utility maximizing individual whose health expenditure is covered by a simple form of insurance. The model implies that demand for treatments that are not time-intensive but money-price intensive are likely to be more sensitive to the introduction of insurance cover or free provision. Conversely the demand for time-intensive treatment will be more responsive to technical changes in required time inputs or economic changes in the opportunity cost of time. Given the pathetic level of poverty in Nigeria, health care demand will be sensitive to health insurance cover, or free provision.

Manning, Newhouse, Duan, Keeler, Leibowitz, Marquis and Zwanziger, (1998) show that the use of medical services responds to changes in the amount paid out-of-pocket, i.e. demand elasticities for medical care are nonzero and the responds to cost sharing is nontrivial. Dong, (2011) also explain that medical utilization is a function of health insurance and health behavior and that health behavior is further a function of health insurance. He further stated that increased use of health care as a result of moral hazard may not lead to improved health while increased health care utilization caused by the effect of lower costs is more likely to improve health. Both Cutler and Zeckhauser (2000) and Zweifel and Manning (2000) concluded that traditional health insurance leads to moderate moral hazard in demand (i.e. where individuals purchase more medical care than they would have if they paid full price).

In Nigeria, research on health insurance and health care demand is dearth. Just as pointed out by Ekman, (2007), Mills, Rasheed, Tollman, (2006), that there is scarce of literature on the effect of various health financing options for low and middle income countries. However, Otuyemi, (2001) explains that the access to health care is limited in Nigeria. While Gana, (2010) points that NHIS coverage in Nigeria is very minimal such that only the formal sector is covered despite the fact that the informal sector is wider. That even within the formal sector not all government and corporate organization employees are

enrolled within the scheme, thus the public and private hospitals are still operating on a fee for service basis for the majority of its clients. Sanusi and Awe (2009) explained increases in income which lead to a less than proportionally increase in medical spending imply that higher health care prices will cause people to reduce their demand for healthcare which will further increase the cost of health care. And that this situation is true of Nigeria where prices of health care are very high even though demand for it is relatively low.

However, Onyebede, Goyit and Nnadi, (2012) conducted an evaluation of NHIS in Jos and found that 24% of adults were enrolled in the scheme, 82% of the enrolled respondents were aware of NHIS and prefer it to the fee for service system and 26% had dissatisfaction with the scheme. Their work had nothing to do with health care demand but rather they focused on proportion of Nigerians enrolled in the scheme and their level of satisfaction. To the best of our knowledge, no research work on the role of NHIS in health care demand in Jos has been conducted. This research therefore bridges that gap.

METHODOLOGY

For this study, the population is the entire NHIS participants in Jos city. Our sample size is 200 NHIS participants in Jos. Questionnaire were used as a means of collecting the primary data. Thus, the study was structured questionnaires administered randomly to respondents as the principal method of data collection. Tables are used to describe the data and Chi-square statistics is used as a tool to analyze the data. Our dependent variable is health care demand, while the explanatory variable is NHIS, with 'cost reduction by NHIS' as its main proxy.

DATA PRESENTATION AND DISCUSSION OF FINDINGS

Data Presentation

Table 1: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 18	12	6.0	6.0	6.0
	18-39	122	61.0	61.0	67.0
	40-59	64	32.0	32.0	99.0
	80 & above	2	1.0	1.0	100.0
	Total	200	100.0	100.0	

Table 2: Community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	174	87.0	87.0	87.0
	Rural	26	13.0	13.0	100.0
	Total	200	100.0	100.0	

Table 3: Employment Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Unemployed	6	3.0	3.0	3.0
Self-employed	10	5.0	5.0	8.0
Employed	184	92.0	92.0	100.0
Total	200	100.0	100.0	

Table 4: NHIS Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Enrollee	182	91.0	91.0	91.0
Dependant	18	9.0	9.0	100.0
Total	200	100.0	100.0	

Table 5: Organization Have Health Insurance

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	178	89.0	89.0	89.0
No	22	11.0	11.0	100.0
Total	200	100.0	100.0	

Table 6: NHIS Involvement

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Compulsory	128	64.0	64.0	64.0
Voluntary	72	36.0	36.0	100.0
Total	200	100.0	100.0	

Table 7: Deductions Made

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	142	71.0	71.0	71.0
No	58	29.0	29.0	100.0
Total	200	100.0	100.0	

Table 8: Nature of Contributions

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yearly	14	7.0	7.0	7.0
Monthly	124	62.0	62.0	69.0
Not yet started	42	21.0	21.0	90.0
No idea	20	10.0	10.0	100.0
Total	200	100.0	100.0	

Table 9: NHIS Has Increased Healthcare Demand

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Higher	28	14.0	14.0	14.0
	Lower	50	25.0	25.0	39.0
	Same	114	57.0	57.0	96.0
	Not sure	8	4.0	4.0	100.0
Total		200	100.0	100.0	

Table 10: Cost Reduction Has Increased Healthcare Demand

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	18.0	18.0	18.0
	No	146	73.0	73.0	91.0
	not sure	18	9.0	9.0	100.0
Total		200	100.0	100.0	

Table 11: Cost Reduction Encourages Unnecessary Healthcare Demand

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	24.0	24.0	24.0
	No	144	72.0	72.0	96.0
	Not sure	8	4.0	4.0	100.0
Total		200	100.0	100.0	

Table 12: Paying Full Cost Leaves Demand Constant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	124	62.0	62.0	62.0
	No	54	27.0	27.0	89.0
	Not sure	22	11.0	11.0	100.0
Total		200	100.0	100.0	

Table 13: Pull Out of NHIS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	108	54.0	54.0	54.0
	No	92	46.0	46.0	100.0
Total		200	100.0	100.0	

Table 14: Have NHIS Abolished

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	108	54.0	54.0	54.0
	No	92	46.0	46.0	100.0
Total		200	100.0	100.0	

Table 15: Test Statistics

	NHIS Status	NHIS Has Increased Healthcare Demand	NHIS Has Reduced Healthcare Cost	Cost Reduction Has Increased Healthcare Demand	NHIS Involvement
Chi-Square(a, b, c)	134.480	126.880	67.720	144.040	15.680
Df	1	3	2	2	1
Asymp. Sig.	.000	.000	.000	.000	.000

- a - 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 100.0.
- b - 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.
- c - 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 66.7.

Test Statistics

	Paying Full Cost Leaves Demand Constant
Chi-Square(a)	81.640
Df	2
Asymp. Sig.	.000

- a - 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 66.7.

Table 15: Test Statistics

	NHIS Has Increased Healthcare Demand	Paying Full Cost Leaves Demand Constant
Chi-Square(a, b, c)	126.880	81.640
Df	3	2
Asymp. Sig.	.000	.000

DISCUSSION OF FINDINGS

Tables 1-8 above show that:

- a. The respondents fall within the working class (61% and 32% i.e. 93%).
- b. 87% of the respondents are from the urban areas indicating that the rural dwellers are not appreciably involved.
- c. 92% are employed, while 91% are NHIS enrollees. Confirming our finding in (a) above. Suggesting that employment status is a prerequisite to becoming an NHIS enrollee.

- d. 89% indicated that their organizations offer NHIS services, and 64% revealed that NHIS enrollment is compulsory in their organizations.
- e. 71% indicated that the deductions are made from their salaries and 62% showed these deductions are monthly.

Tables 9-14 also show that:

- f. Comparing their level of Health Care consumption before NHIS and now, 25% said it is lower and 57% said it remains the same, implying 82% (25 + 57) indicated that NHIS has not influenced their level of demand. The 25% suggest that NHIS is rather a discouragement to their accessing health care. However, 14% indicated NHIS encourages them to consume some health care services which they were not consuming before joining the scheme- direct price effect of NHIS on demand.
- g. 73% of the respondents revealed that the cost reduction by NHIS has not increased their health care demand.
- h. 72% said that the NHIS cost reduction does not stimulate them to consume health care services which they would not have ordinarily consumed in the absence of NHIS. Suggesting that NHIS does not lead them into moral hazard. While 24% revealed that as a result of the health care cost reduction made by NHIS, they embark on unnecessary health care consumption- moral hazard.
- i. 62% agreed that if they were to pay the full cost of health care; their level of health care demand will remain the same. This suggests that the NHIS participants who are largely employed are those that could afford their health care costs, but were forced to join or simply joined because they thought it was going to reduce their out-of-pocket health care expenditure only to discover that such expenditure is still covered by them. However, 27% indicated that their level of demand will not remain the same, implying NHIS has a direct price effect on their demand.
- j. If wishes were horses, i.e. if these respondents had their ways: 54% will pull out of the scheme and again 54% would have it abolished. Implying that even though 82% of the respondents indicate that NHIS does not influence their health care demand, they are suggesting that it should be given a chance, it should be improved upon. Because even if they had their way about half (54%) of the sample would not pull out and again about half (54%) will not abolish it.

TEST OF HYPOTHESES

Hypothesis 1, H_0 : NHIS increases health care demand

From Table 15 above the degree of freedom (d.f.) = 3, level of significance = 5% (0.05).

Calculated chi-square value is =126.88, the critical, or tabulated value is = 5.991

Decision Rule: reject H_0 , if calculated chi-square value exceeds the tabulated. Since the calculated value is 126.88 and the tabulated is 5.991 the null hypothesis (H_0) is rejected, while the alternate hypothesis (H_1) that states that NHIS does not increase health care demand is accepted.

Hypothesis 2, H_0 : NHIS has a direct price effect on health care demand

From table 15 above, the degree of freedom for hypothesis 2 is 2 and level of significance is also 0.05. Calculated chi-square is 81.640 and tabulated or the critical value is still 5.991. Decision rule is still the same as the above. Thus since the calculated is more than the tabulated, the null hypothesis (H_0) is rejected, while the alternate, which states that NHIS does not have a direct price effect on health care demand is accepted.

CONCLUSION AND RECOMMENDATIONS

Based on the findings, it is here concluded that:

- Those that have no employment are not enrolled into NHIS. This confirms Gana (2010) who explained that only the public sector is covered by NHIS.
- Some organizations make it compulsory for their employees to participate.
- The level of health care demand has not been significantly increased by the cost reduction which NHIS claims to make.
- There is some element of the direct price effect (14%-27%) as well as moral hazard (24%) effect of NHIS on health care demand in Jos. Though these effects are very minimal they reveal that no health insurance is devoid of these effects.
- About half of the participants if given the chance will pull out of the scheme while the other half will remain. Again half of the respondents if given the chance will abolish the scheme, while the other half will not. These suggest a desire to give the scheme some more time despite the disappointment faced by the participants.

RECOMMENDATIONS

- Since funds are drawn for the purpose of reducing out-of-pocket expenditures of participants, yet the participants do not feel this relief, perhaps the funds are diverted. The scheme therefore needs a serious overhaul aimed at identifying and curtailing fund's diversion so as to make and if possible, increase the basic provision of health care goods and services.
- The services and drugs provided by NHIS should not be too minimal. The drugs for example, should not be merely drugs that even a beggar can afford, but drugs that are of high value.

- When an individual is sick he should concentrate on getting well not compound the problem with thinking of how to pay the cost of his/her health care goods and services. When NHIS constitutes a problem instead of the solution it worsens the consumer's problems. Thus, NHIS has the tendency of worsening its customers' problems; its activities therefore, have to be carefully and closely guarded by a higher authority.
- An effective consumer protection authority or body, not just for NHIS consumers but for all health care consumers in Nigeria should be established. This will go a long way making all health care providers sit up and always remember that they are actually dealing with irreplaceable lives, because some of them tend to forget. Legal practitioners and health economists should be an integral part of this body.
- However, as the scheme grows and develops, ways of checkmating the chances of moral hazard, that is, a situation where consumers consume goods and services which they will not ordinarily consume if they were to pay the full cost of these goods/services must be identified. This checkmate however, should not be in such a way that the consumers are denied what is legitimately theirs under the auspices of preventing unnecessary demands.
- Efforts should be made by the government to capture the informal sector, which constitutes a larger chunk of the Nigerian poor, the real target of the scheme. Since a larger number of the population of this informal sector is unemployed, the big question is how do they make their contributions?
- Job creation especially by encouraging the private sector- the self employed thrive via providing the conducive environment and therefore reducing the army of the unemployed youths will go a long way making the informal sector significantly participate in the scheme, when the informal sector's NHIS package takes-off, if not it will only remain a mirage. The importance of job creation, poverty reduction, in short economic empowerment in the success of a national health insurance programme in a country with a big informal sector like Nigeria can not be overemphasized.
- If the scheme is effective, satisfactory and attractive it will automatically attract its customers and keep them. Thus, organizations should not make it compulsory to their staff members, if those that do not feel satisfied could easily walk away or have a protection authority to complain to, it will make NHIS sit up to its responsibility. Except if efforts geared towards making NHIS effective are intensified, NHIS merely remains an addition to the numerous institutions that exist in Nigeria for the sake of the name not result. It should be result oriented.

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Appendix

Research Questionnaire

Faculty of Social Sciences
Department of Economics
University of Jos
Plateau State.
July 29, 2013.

Dear Respondent,

REQUEST FOR RESEARCH INFORMATION

I am from the above department, undertaking a research on the Role of National Health Insurance Scheme (NHIS) in health care demand. **Note that:** health care demand refers to the amount of health services that individuals are willing and able to obtain or buy as a function of many factors as price. Therefore, I sincerely solicit for your cooperation in making me achieve my set goal by answering the questions below. Note that, your responses are strictly for academic purpose and are therefore, highly confidential.

Thank you for your cooperation.

Yours Faithfully,

Dickson, Vonke Juliana

Instruction: please tick the appropriate option or fill in the blank spaces.

1. Sex M [] F []
2. Age: 18-39 [] 40-59 [] 60-79 [] above []
3. How would you describe your residential community? Urban [] Rural []
4. What is your employment status? Unemployed [] Self-employed [] Employed []
5. Are you a NHIS enrollee [] or, a dependent []?
6. Does your organization offer health insurance? Yes [] No []
7. Is your involvement in NHIS compulsory [] or, voluntary []?
8. Are deductions made from your salary as your contribution to the scheme? Yes []
No []
9. What is the nature of your contribution? Yearly [] Monthly [] Not yet started []
10. Comparing your health care demand before NHIS to the demand now, will you say it is now: Higher [] Lower [] Same [] Not sure []?
11. Has NHIS helped in reducing health care cost to you? Yes [] No [] Not sure []
12. Does the cost reduction increase your health care demand? Yes [] No [] Not sure []
13. Does the reduction in health care cost encourage you to demand for health services which you would not have ordinarily demanded? Yes [] No [] Not sure []
14. Do you think if you were to pay for the full health care cost, your level of demand will still remain the same? Yes [] No [] Not sure []
15. Generally speaking, do you think NHIS is effective? Yes [] No [] Not sure []
16. If wishes were horses would you:
 - a. Pull out of NHIS? Yes [] No []
 - b. Have NHIS abolished? Yes [] No []