

ORIGINAL ARTICLE

Evaluation of Janani-Sishu Suraksha Karyakram in a Community Development Block of Bankura District, West Bengal, India: A Mixed Methods Approach

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Abstract

Background: Government of India launched Janani-Sishu Suraksha Karyakram (JSSK) for cost-free care during pregnancy and infancy. **Objectives:** To assess awareness and utilization of JSSK services, estimate expenditures incurred to avail care and find out influencing factors for implementing JSSK. **Methodology:** A cross-sectional evaluation study using mixed methods was conducted during April-September 2015 in Gangajalghati block of Bankura district, West Bengal. From its thirty subcentres (lots), 120 mothers and pseudo-cohort of 120 infants were selected using Lot Quality Assurance Sampling. Beneficiary mothers and caregivers of infants were interviewed through house-to-house visits using semi-structured questionnaire. ANMs and ASHAs were selected by simple random sampling and involved in Focus Group Discussion. In-depth interview was conducted for Block Medical Officer of Health, Deputy CMOH-III of Bankura and Medical Superintendent cum Vice-Principal of Bankura Sammilani Medical College and Hospital to explore factors of utilization. **Result:** Only 13.3% and 3.3% lots were acceptable for awareness and 16.7% and 13.3% for utilization for mothers and infants respectively. Overall coverage was 9.2% and 7.5% for awareness and 20.5% & 10.75% in utilization for services, while Out of Pocket Expenditure was estimated to be INR 690, 651 and 250, 545 (median, IQR) for mothers and infants respectively. Indirect costs were INR 540, 618 and 300, 460. Inadequate fund flow, manpower shortage, unavailability of referral transport timely, and poor prescribing for hospital supply medicines undermine the credibility of JSSK. **Conclusion:** Improved IEC and supervision, adequate fund and timely transport availability would forward this flagship programme of the Government.

Keywords

Janani-Sishu Suraksha Karyakram; out-of-pocket expenditure; mixed methods.

Introduction

The Universal Declaration for Human Rights, 1948 in article 25 stressed that, "Motherhood and Childhood are entitled to special care and assistance". (1) Still globally an estimated 2, 89,000 mothers died of pregnancy or related complications in 2013 giving rise of global maternal mortality ratio (MMR) of 210 per 1, 00, 000 of live birth (LB). (2) Infant mortality rate (IMR) in the same year was 34 per 1000 LB globally. (3) In India about 67,000 women die every year due to pregnancy related complications and approximately 13 lakhs infants die within one year of birth. (3) West Bengal ranks at 5th position in both MMR and IMR with 117/1, 00,000 and 32/1000 LB respectively (4) as compared to estimations of 178/1, 00, 000 and 42/1000 LB at national level (SRS-2012). (3)

Most of these deaths could be prevented by universalizing delivery and sick infant care in the institutional fold. With the direction of achieving this objective, Government of India (GOI), in 2005 planned and launched conditional cash transfer (CCT) scheme namely, *Janani Suraksha Yojana* (JSY). (5)

Still it has been long noted that cost, both direct as well as indirect, became a formidable hindrance to access services. In the quest of removing the financial obstacle, central government launched the Janani-Sishu Suraksha Karyakram (JSSK) on the 1st of June, 2011 from Mewat District of Haryana. (6,7) It provides utmost importance on elimination of out-of-pocket expenditure (OOPE) by removing user charges for both pregnant women and sick neonates. Entitlements include free drugs and consumables, essential diagnostics, blood, if required; diet for duration of hospital stay (expected to be three days in case of normal delivery and seven days in case of caesarean section). There is provision for free referral transport services to and fro and in between, if required. (7) Similar entitlements have been put in place for sick neonates accessing care from public health institution later on which extended to cover up to one year of age of the babies besides covering complications during antenatal and postnatal period. (8) Provision for grievance redressal is also there. The Government of West Bengal implemented JSSK on 15th August, 2011 in all 19 districts. (5)

Aims & Objectives

1. To assess the awareness of beneficiary mothers and caregivers of the infants

2. To ascertain the utilization of JSSK entitled services by them
3. To estimate different costs incurred by the beneficiaries namely, OOPE as well as indirect cost
4. To find out influencing factors for implementation of JSSK, if any

Materials and Methods

Study type: A community-based evaluation study via cross-sectional survey with mixed methods approach (9) comprising of both quantitative as well as qualitative design.

Study area: The study was conducted in Gangajalghati CD block having a population of 1, 86, 927 in the district of Bankura, West Bengal, India. (10)

Study duration: Six months (April to September, 2015)

Study Population: Women delivered and completed puerperium between April to June, 2015 and infants born in between July 2014 to June 2015, in any public health Institution were considered as study population. Those who attended any private health facility or women delivered at home were excluded from data collection.

Sampling Design: Gangajalghati CD block, being the rural field practice area of Department of Community Medicine of Bankura Sammilani Medical College, Bankura, was selected purposively.

Sample size calculation: Following Lot Quality Assurance Sampling (LQAS) technique, assuming $\pm 9\%$ desired level of accuracy and 95% desired level of confidence, sample size was determined to be 119, rounded to 120 for each of the two groups, i.e. pregnant women and infants. (11) From each of the thirty subcentres (lots), four beneficiaries of each group were selected by simple random sampling (SRS). A pseudo-cohort of infants was considered having one infant in each of the age-quarter from every subcentre. (12) Decision value was calculated as 2, i.e. any lot, having more than two respondents without adequate knowledge and more than two beneficiaries without adequate utilization would be sufficient to consider the lot as 'not acceptable'. (13) Cut-off point considered as 50% i.e. awareness on four service components out of total committed services and in regard to utilization, availing at free-of-cost 50% of total service as needed.

From ten Gram Panchayats (G.P.) of the block, ten health worker female (HWF), either 1st or 2nd

auxiliary nurse midwife (ANM) were selected following SRS and similarly, nine accredited social health activist (ASHA) were chosen, as in one G.P. no ASHA was posted.

Concerned health officials, namely Block Medical Officer of Health (BMOH), Superintendent of tertiary care hospital in the referral chain as well as Nodal Officer of JSSK at Bankura district were included in the study as stakeholders of the programme.

Ethics: Ethical clearance from the Institutional Ethics Committee, BSMC, Bankura was obtained and permission was taken from District health and Family Welfare Samity, Bankura.

Methods of data collection: A semi-structured questionnaire for data collection was prepared in local vernacular (Bengali) and checked by seven subject matter experts (SMEs) for content validity and pre-tested in a nearby block.

A house-to-house survey was conducted and after obtaining informed consent, data pertaining to socio-demographics such as age, religion, caste, education, occupation, family type, socio-economic status, place of delivery etc. were collected. Overall and component wise knowledge and utilization of each and every service were sought of. Monetary expenditure, incurred to different items by the household for availing services, in the form of both direct, i.e. OOPE and indirect costs were also estimated. Cost of transport, food, drugs and consumables, charges for admission, stay, treatment and investigations as well as expenses for blood transfusion and special non-government attendants at hospital were included as OOPE whereas cost for food and lodging, wage loss of accompanying persons and payment for maid to carry on household were considered as indirect cost.

Two Focus Group Discussions (FGDs) with ASHAs and ANMs and In-Depth Interviews (IDI) were conducted with concerned block, tertiary health care manager and district level stakeholders to obtain information on influencing factors for implementation of the programme.

Data management and analysis: Data were entered after codification in MS excel spread sheet. Weighted and estimated coverage of selected lots were calculated for drawing inference about awareness and utilization. Median, Interquartile range (IQR) as well as mean and standard deviation (SD) of expenditure per encounter were estimated in Indian National Rupees (INR). After transcription from audio-visual aids, the qualitative data obtained

from FGDs and IDIs were translated. Labeling, indexing and coding followed by creating categories or themes were done during analysis. The decoding was done to draw inferences.

Results

Socio-demographic profile

Analysis revealed that, 98.3% mother beneficiaries were Hindu. Majority (40.8%) belonged to general caste followed by scheduled caste (SC) (27.5%). By occupation, 80.8% were homemakers and 48.3% were educated upto primary level. Among infant beneficiaries 94.2% were Hindu, 33.3% belonged to general caste and 28.3% were from SC family. More than 3/4th (84.2%) were cared by mothers and rest by fathers with 47.5% of mothers and 59.2% of fathers having education upto primary level and higher education for <10%. Three-fourth (75%) of infants' fathers were laborer and 18.3% were reported to be service holder. Most (73.3%) of the infants' mothers were found to be home maker followed by laborer (22.5%) and service holder (4.2%). Majority (69.2%) of mother beneficiaries were from joint families whereas infants mostly (54.2%) belonged to nuclear families. About 2/3rd (65%) mothers and 75.83% of infants belonged to low SES i.e. class IV and V of B.G. Prasad SES scale, May 2014.

Awareness on JSSK entitled services

Slightly more than 3/4th (76.7%) mothers heard about JSSK scheme but only 17.5% could name anyway. Among the infants' caregivers, 55% heard of it and 5% managed to name. Except for one of the mother beneficiary, none could spell out the name of the scheme exactly.

Analysis revealed that, out of 30 lots (subcentres), only 13.3% and 3.33% i.e. 4 and 1 lots respectively, were considered acceptable as having minimum adequate knowledge on maternal and sick infant care services. Whereas overall coverage in respect to the total surveyed population was 9.2% and 7.5% respectively ([Table 1](#)).

Source of knowledge was mainly ASHAs and ANMs in 69.2% and 27.8% for mother beneficiaries and 31.7% and 13.3% for infants' caregivers respectively.

Display of free entitlements under JSSK

In the study area, in almost all the subcentres there were display boards of JSSK, but neither the recent changes were present nor was the placement or maintenance of the board was satisfactory. Two subcentres had no display board visible and as per

the health workers statement that boards were removed during recent repair works. Even in the community health centre (CHC), information-education-communication (IEC) in writing was found much poor and so also in the BSMC Hospital (BSMC & H), display was nowhere with easy visibility and accessibility for current and potential future users.

Availability of JSSK entitled services

As reported by District Nodal Officer of JSSK, there was an allotment of total 12 Nischay Yans designated for Gangajalghati block and 37 such for BSMC & H out of which, only 3 and 14 are functioning currently. For the year 2013, INR 2, 28, 708 lakhs were flowed through District head quarter (HQ) towards Gangajalghati block mother and child (MCH) fund for JSSK. Over and above this, on submission of utilization certificates, for different procurements at local levels, fund transfer was done. There are provisions of diagnostic services at all levels both from purely govt. as well as public private partnership (PPP) model clinics.

Utilization of JSSK entitled services

Analyses showed that, out of thirty, 5 (16.7%) and 4 (13.3%) lots could cross acceptability criteria which was pre-fixed to be availing of 50% of total services needed by mother and infant beneficiaries respectively whereas, in respect to the overall surveyed population this was 20.5% and 10.75% (Table 2).

Component wise analysis revealed that, full utilization of free referral transport, free diet, free drugs and free diagnostics were availed by 55 (46%), 95 (79%), 38 (32%) and only 17 (14%) of the total 120 mother beneficiaries.

Full utilization of free transport, diet, drugs and diagnostics among infant beneficiaries were 18%, 63%, 16%, 67% and 10% respectively.

Out-of-pocket and indirect expenses

It was reflected from analyses that OPE, per encounter was highest for drugs (Mean±SD=851.45±995.12) among mother beneficiaries followed by transport (197.51±219.65), diagnostics (108.35±269.46) and non-govt. special attendant employed at hospital (160.36±156.78). For infant beneficiaries, OPE per encounter went maximally for drugs (Mean±SD=569.51±800.69) followed by availing of transportation (317.74±412.00) (Table 3)

Indirect cost incurred by household of beneficiaries and expenditure per encounter for staying of persons accompanying, loss of wages of family

members and cost for the home attendants were 358.70±567.69, 329.76±269.04 and 58.38±156.95 (Mean±SD) for mother beneficiaries and 99.62±105.67, 126.67±200.29 and 5.66±54.43 for infant beneficiaries (Table 4)

Median, IQR for direct and indirect expenses were INR 690, 651 and INR 540, 618 for mothers and INR 250, 545 and INR 300, 460 for infants (Figure 1 and Figure 2).

Influencing factors for Programme implementation

None of the grass root level health workers participated in FGDs received any formal training on JSSK but most of them knew about the service components though having confusion regarding number of times of service availability (specially of referral transport). Regarding timing of service availability, the respondents stated that all the services are available during delivery and upto 42 days postpartum and some of the ASHAs reported that registration and 4 ante natal check-ups (ANCs) are pre requisites for obtaining JSSK services but none of them had any idea on service availability during antenatal period. They were also found to have confusion regarding whether the services are available at government accredited private facilities or not. As per them apart from IEC displayed in the facilities, IEC is mainly done through inter-personal communication (IPC) in the clinic as well during home visits. Monitoring-supervision seemed to be rudimentary. Non-availability of Nischay Yan in time and medicines in health facilities were reported to be the major areas of clients' dissatisfaction. None of the participants heard of existence of grievance redressal system in any form at block or tertiary care level.

In-Depth interview revealed that, concerned Block, Tertiary care level and district level managers were aware about different service components under JSSK. District programme manager clearly spelt that for every episode of illness during pregnancy, puerperium and infancy free services are available in government health facility. Rest two stakeholders were found to have confusion regarding number of times of service availability. All the stakeholders opined that irregular fund flow and shortage of manpower are hindrance for smooth service delivery. They also reported poor motivation among a segment of physicians for prescribing medicines from hospital, contributing towards poor clients' satisfaction damaging the credibility of the programme and negative repercussion among future

beneficiaries. None of them either received any training or arranged it for subordinates. All of them considered existing IEC for JSSK as insufficient and less effective. The participants admitted that neither any separate monitoring-supervision nor any reporting system exists for JSSK at any level and grievance redressal system was reported to be rudimentary at all the levels. All respondents suggested for increased fund flow with regularity, more Nischay Yan enabled with geographical positioning system (GPS), improvement of road condition and phone network especially at periphery, high level of inter-sectoral coordination and intensified IEC are needed for betterment of the programme.

Discussion

Among the mother beneficiaries, 40.80% belonged to general caste followed by 27.5% SC, nearly 50% educated upto primary level, majority was housewives (80.8%) mostly from joint family (69.2%) of SES class V (41.67%) and IV (23.33%). Respondent mothers showed an almost universal preference for institutional delivery with more inclination towards tertiary care hospital (57%) over the CHC (34.7%). This have been supported by the study of Panja TK *et al.* in West Bengal (14) and Goyal RC *et al.* in Wardha, Central India. (15) Chatterjee S *et al.* in their study in North 24pgs, W.B. (16) and Mangulikar SK *et al.* in Maharashtra (17) got similar socio demographic picture.

Socio-demographics of infants who attended at least once in government health facility for any health ailment, revealed that nearly 1/3rd were from general caste family (33.3%), nearly half of the infants' mothers were found as educated upto primary level (47.5%) and mainly housewives by occupation (73.3%) and fathers were mostly daily wage laborers (75%). Majority belonged to nuclear family (54.2%) of SES class V (40.83%) and IV (35%). Though for out-patient department (OPD) attendance CHC was opted by most but for admissions in in-patients (IPD), Medical college hospital gained preference. Concurrence of these findings was not found out even after extensive literature search.

In the current study, in respect to maternal and infant JSSK services respectively, 76.7% and 55% of interviewees were found to ever heard of existence of such a scheme and only 17.5% and 5% anyway managed to utter the name of the scheme.

Regarding awareness about JSSK components, it was found that only 13.3% of subcentres could cross 50% cut-off point for maternal services and only 3.33% for infant care services having overall coverage of 9.2% and 7.5% of study population. In majority of cases, source of information were frontline health workers, mainly ASHA and ANMs for both the groups, either the beneficiaries themselves or their caregivers. Study by Mondal J *et al.* had the similar findings.(18) Study by Sharma S *et al.* in Delhi revealed overall affirmation despite fogginess in component wise knowledge among beneficiaries.(19) Rathore G observed good awareness (57.58%) about free entitlements among pregnant women in Rajasthan.(20) However, low level of awareness was observed by Goyal RC (15) and Baruah J in Punjab (6.7%), Haryana(<1%), Uttar Pradesh(13.3%) and Bihar(7.7%) in 2012.(21) Chatterjee S *et al.* observed only 31.25% awareness on maternal services and <10% on infant services.(16) Mangulikar S K observed 45.6% awareness on transport facility among post-natal mothers. (17) Present study revealed that, 16.7% and 13.3% lots qualified for maternal and sick infant service utilization with overall coverage of 20.5% and 10.75% of total study population, respectively. Utilization report by Bhusan H (2012) supports the current study by stating for <40%, 40-70% and only 10-30% coverage reported from West Bengal for drugs, diet and transport only contradicting in regard to diagnostics, which is >70% achievements in their findings. (22) Current observation is supported by Goyal RC *et al.* who found only 28% utilization by pregnant women (PW) and absolutely zero for sick newborns availed free referral transport in Wardha, Central India. (15) Rathore G in her Rajasthan Experience reported 88.8% of transport facility utilization by pregnant women. (20) State Institute of Health and Family Welfare (SIHFW), Rajasthan (2012-13) found nearly 59.5% PW and 1.79% sick newborns availed for free transport from home to institution which was somewhat high on way back. (23) Ministry of Health and Family Welfare (MOFHW), Maharashtra (2012-13) reported it to be 16.2% for PW and nearly 1% for neonates. (24)National Health System Research Centre (NHSRC) (Q1:2012-13) found transport utilization by PW in Orissa about 50%.(25)Jan R reported 51.7% free ambulance service usage by recently delivered women in Kashmir. (26) No study has been found to show utilization of other services in either state. National Health Mission (NHM), WB, 2014 reported

only for state wise total number of both the groups of beneficiaries who availed the different categories of services from April to December, 2013(4) and that's why couldn't be compared by any means. Average OOPE was found maximum for drugs followed by transportation (for both the mothers and infants). Indirect expenditure was also high. Similar findings were reported by Tripathi N. *et al.* in their study on urban slum dwellers from Northern India. (27) Study by Mondal J *et al.* also showed quite a high median for OOPE in government health facilities besides high indirect expenditure though much lower than private sectors. (18) Mohanty SK *et al.* observed that in India, women of general caste, higher age and from above poverty level (APL) families had higher OOPE. (28)

Availability as well as accessibility is the foremost pre-requisites to achieve adequate utilization of services entitled under JSSK. From FGDs conducted with frontline health workers (ASHAs and ANMs) it was evident that, there is a huge gap in knowledge at service providers' level also which is contributing towards poor dissemination of information towards community both in quality as well as quantity.

Block, District and Tertiary level stakeholders pointed out towards irregular, inadequate fund flow, shortage of manpower, poor condition of roads and phone networks at periphery level. In addition to above shortfalls none could deny for rudimentary nature of existing supervision-monitoring and reporting and practically non-existence of grievance redressal system at any level.

Conclusion and recommendation

Although JSSK was started in 2011 and going to complete its 5th birthday within next few months; it has failed to achieve its envisaged goal of cost-free service delivery towards pregnant women and sick infants due to gaps in its implementation mainly at facility levels. Priority areas for intervention today are awareness generation besides service provision. Improved IEC, active monitoring-supervision, regular adequate fund flow, ensuring timely availability of services seem to be need of the hour for this flagship programme of Gol.

Limitation of the study

The current study was conducted in one of the CD block of Bankura district. Generalization of study findings may be erroneous for the districts other than Bankura. Recall bias, especially about expenditure mostly in absence of documentary

evidence, was a possibility. A Multicentric and nationwide, longitudinal study in future would have been a better option.

Relevance of the study

The study is expected to identify gaps at implementation as well as utilization levels which might help all, right from the beneficiaries and their caretakers, health professionals at different levels, midlevel managers and policy makers to fill them in for future betterment of the programme.

Authors Contribution

SM: Study concept, design, data collection, analysis, drafting; SS: Design, data collection, final approval; DH: Study concept, design, data collection, analysis, final approval; APS: Study concept, design, data collection, analysis, final approval; DB: Data collection, drafting, analysis; GNS: Study concept, design, data collection, final approval.

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Tables

TABLE 1 DISTRIBUTION OF LOTS QUALIFIED FOR AWARENESS ON JSSK ENTITLED MATERNAL AND INFANTS’ HEALTH CARE SERVICES

Lot no.	Lot name	Lot population	Weight	Lot sample size	No. of mothers having knowledge of 50% services	Proportion	Estimated coverage	Decision value	Accepted(A)/ Rejected(R)
Mothers									
8.	Kesiara	14	0.04	4	3	0.75	0.03	2	A
9.	bhaktabandh	11	0.03	4	3	0.75	0.02	2	A
14.	Ramharipur	10	0.03	4	2	0.5	0.015	2	A
27.	Ghatagram	15	0.04	4	2	0.5	0.015	2	A
Grand total		356	1.0	120	14		0.092		
Infants’ caregivers									
14.	Ramharipur	72	0.02	4	2	0.5	0.01	2	A
Grand total		2671	40.51	120	10		0.075		

TABLE 2 DISTRIBUTION OF LOTS QUALIFIED FOR UTILIZATION OF JSSK ENTITLED SERVICES:

Lot no.	Lot name	Lot population	Weight	Lot sample size	No. of beneficiaries having 50% services utilization	Proportion	Estimated coverage	Decision value	Accepted(A)/Rejected(R)
Maternal services									
11.	Kukrajhore	11	0.03	4	2	0.5	0.015	2	A
15.	Banasuria	9	0.03	4	2	0.5	0.05	2	A
16.	Kustholia	13	0.04	4	2	0.5	0.02	2	A

26.	Amdanga	10	0.02	4	3	0.75	0.015	2	A
28.	Rajamela	12	0.03	4	2	0.5	0.015	2	A
Grand total		356	0.96	120	26		0.205		
Infants' caregivers									
2.	G.dham	89	0.03	4	2	0.5	0.015	2	A
3.	G.ghati	113	0.04	4	2	0.5	0.02	2	A
4.	Desuria	92	0.03	4	2	0.5	0.015	2	A
6.	Bhattapara	77	0.02	4	2	0.5	0.01	2	A
Grand total		2671	40.51	120	16		0.1075		

TABLE 3 DISTRIBUTION OF OUT-OF-POCKET EXPENDITURE OF THE BENEFICIARIES

Parameters	Transport	Diet	Drugs	Consumables	Diagnostics	Blood	Others
Mothers							
Median±IQR	730±1150	78±396	1000±873	150±150	0.00±450	*	135±150
Expenditure per encounter (mean± SD)	197.51±219.65	12.93±18.72	851.45±995.12	111.34±254.11	108.35±269.46	40.36±94.65	160.36±156.78
Infants							
Median ±IQR	200±495	400±904	972±450	75±45	100±150	*	200±250
Expenditure per encounter	317.74±412	26.32±51.98	569.51±800.69	78.20±116.50	61.70±279.08	4.72±19.78	24.72±19.78

TABLE 4 DISTRIBUTION OF INDIRECT EXPENDITURE OF THE BENEFICIARIES

Parameters	Food and lodging of family members	Wage loss of family members	Cost for maid servant for house hold works
Mothers			
Median±IQR	310±37	300±68	160±110
Expenditure per encounter (mean± SD)	358.70±567.69	329.76±269.04	58.38±156.95
Infants			
Median ±IQR	75±160	135±300	*
Expenditure per encounter	99.62±105.67	126.67±200.29	5.66±54.43

Figures

FIGURE 1: DISTRIBUTION OF DIRECT AND INDIRECT COSTS INCURRED TO AVAIL JSSK ENTITLED MATERNAL HEALTH SERVICES BY BOX AND WHISKER PLOT

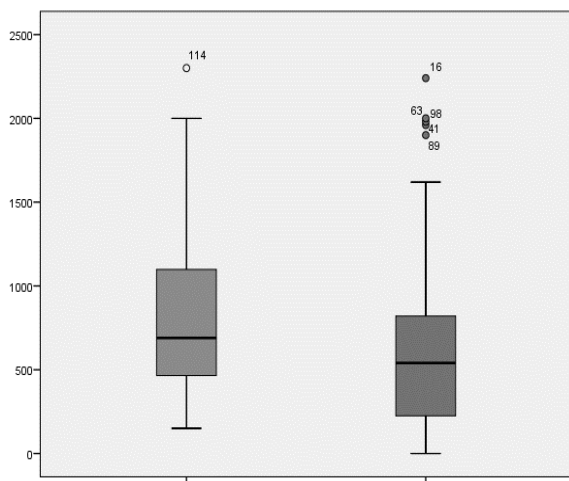


FIGURE 2: DISTRIBUTION OF DIRECT AND INDIRECT COSTS INCURRED TO AVAIL JSSK ENTITLED INFANT HEALTH SERVICES BY BOX AND WHISKER PLOT

