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COUNTRY REPORT SERIES

THAILAND

**SYSTEMS ANALYSIS OF PHC PROGRAM
OF SRISAKET PROVINCE**

SYSTEMS ANALYSIS
of
THE PRIMARY HEALTH CARE PROGRAM
of
SRISAKET PROVINCE, THAILAND

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PRICOR
(Primary Health Care Operations Research)

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This report is based on "Qualitative Assessment of PHC Interventions", prepared by Peerasit Kamnuansilpa and Anthony Bennett (November, 1988) and additional data analyzed by Anthony Bennett from data collected in March, 1987 by staff of the Management Improvement Unit, Office of Primary Health Care and the Provincial Medical Office, Srisaket Province, Thailand.

This is the preliminary systems analysis report. A final report will be released later this year which will show comparisons between the baseline and follow-up systems analysis.

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PREFACE

Over the past decade, national and international commitment to extending basic health services to underserved urban and rural populations in developing countries has led to major investment in primary health care (PHC) and child survival program strategies. However, these programs continue to face persistent problems with underutilization of services, lack of knowledge and acceptance of home-based interventions, and at times, inadequate quality of services provided. Typically, program managers lack specific information about how service delivery activities and support functions such as supervision, are routinely carried out.

While surveys and evaluations have tended to focus on measuring program inputs (such as training and supplies), outputs (such as number of services delivered) and impacts (such as changes in morbidity rates), relatively little attention has been devoted to analyzing the performance of the activities that produce a given outcome. Yet, opportunities to improve the effectiveness of PHC and child survival programs at the operational level clearly depend on strengthening these service delivery and support processes.

Responding to the need for better information on the process of service delivery, the Agency for International Development has launched, through the Primary Health Care Operations Research Project (PRICOR) Project, a major international effort to document and analyze the activities of PHC programs in developing countries. PRICOR was established in 1981 under a cooperative agreement with the AID Office of Health to help developing countries improve their PHC and child survival programs through practical, decision-oriented management studies and operations research. In its second phase, a major PRICOR objective is to develop new and innovative ways of identifying and diagnosing discrete problems in the process of service delivery that will lead to measurable improvements in program performance.

PRICOR staff now are refining and applying a systems analysis approach that allows program managers to accurately describe how key components of the PHC program actually operate and to identify the specific weak points and bottlenecks that impede effective delivery of PHC services at the peripheral level. The systems analysis relies on direct observations, key informant interviews, limited surveys, and other rapid assessment methods to provide decisionmakers with a comprehensive picture of program strengths and failures. By shifting the focus from input and outcome measures to process indicators, systems analysis provides concrete data that lead to tangible improvements, through immediate corrective action or short, problem-solving studies.

The PRICOR Country Report series presents the efforts of PRICOR staff and investigators from collaborating institutions to apply in some dozen countries practical methodologies for observing and measuring how PHC service delivery activities are being carried out. During September 1987, the PRICOR systems analysis methodology was employed to examine primary health care service delivery in Srisaket Province, Thailand. This volume presents these activities conducted by the Management Information Unit of the Ministry of Public Health with the assistance of the PRICOR Project.

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EXECUTIVE SUMMARY

In late 1987, a systems analysis of primary health care was conducted in one province of Thailand to determine how services that impact directly on child survival can be improved where they are most weak.

Observation teams comprised of physicians, nurses and public health professionals conducted approximately 6,000 observations of provider-client interactions, stocks of supplies, and health education message retention. The observations were aggregated to generate a broad impression of quality of services.

Of the six elements of primary health care that were the focus of the systems analysis, oral rehydration therapy and growth monitoring were found to have the most service delivery problems. Immunization services fared better, although the checklist identified some significant gaps in a number of essential tasks. Antenatal care, family planning and water and sanitation were generally the strongest of the six elements, but suffered from deficiencies in some types of equipment and supplies.

- o Antenatal care: adequately equipped (except for uterine sounds) and delivered, although the taking of blood and urine samples, screening for syphilis, and provision of TT injections need attention;
- o Family planning: services were performed completely and correctly in the areas that were observed. However, FP health education was constrained by a lack of visual aids at the village level and in some health centers;
- o Water and sanitation: services were performed well, but were hampered by a lack of materials and supplies for demonstrations.
- o Immunization: there was a significant shortage of educational materials and, perhaps as a result, education and counseling of the mother was poor. Screening was rare, staff did not always use a fresh syringe for each child and did not always dispose of the syringes and needles properly.
- o Oral Rehydration Therapy: Supplies were not a problem. VHVs tended to skip over screening and history taking, did well on education, but were not good referral agents. Health center staff did well on screening but not as well on education.
- o Growth Monitoring: Also short on educational materials and education and counseling were deficient. There was no screening, scales were not properly calibrated, children were weighed with their clothes on, and there were some deficiencies in plotting and updating the growth charts.

The data from the checklists were presented to the Srisaket provincial health management in late 1987. Subsequently, a refresher training program for peripheral health workers and volunteers was implemented to improve skills in screening, counseling and education. The supply system was improved, and supervision strengthened.

The training program was conducted in a sample of districts to enable the researchers to evaluate the impact of the training and other interventions. A follow-up systems analysis and survey in May, 1989 will determine what impact the program interventions have had.

The systems analysis demonstrated that a large amount of generalizable information could be obtained from a small sample of observations because of a high degree of consistency in service delivery within and across health centers and staff.

It would appear that the systems analysis methodology can be a valuable, inexpensive, rapid and powerful tool for identifying PHC service delivery strengths and weaknesses. The key factors that appear to have made the systems analysis successful in Thailand were the specificity of the observation checklists, the multi-disciplinary makeup of the observer teams, the rapid and highly relevant analysis and presentation of results in tabular and graphic forms by the observer teams, and the joint solution development exercise by the observer teams, district managers and service providers.

1.0 BACKGROUND

1.1 Antecedents

In early 1986 the Ministry of Public Health (MOPH) and the U.S. Agency for International Development (USAID) Mission in Thailand requested assistance from PRICOR to conduct a "Management Needs Assessment" of the Thai Primary Health Care Program.

A joint MOPH-PRICOR team conducted that needs assessment between April and June, 1986. The report identified a number of management constraints on the program. Among these were inadequate training and supervision of health volunteers (VHVs), a cumbersome and time-consuming information system, lack of understanding among officials of the concept of primary health care (PHC), and over-centralization of the planning and management of the program.

The team presented its findings to the Permanent Secretary, who requested that PRICOR assist the Office of Primary Health Care (OPHC) in establishing a Management Improvement Unit (MIU) to study ways to overcome these constraints. A list of study priorities was developed by the team based on the needs assessment. A work plan was developed for the first year and approved by November, 1986. The work plan included the establishment and staffing of the MIU, a study to assess the viability of the PHC volunteers, a study to "rationalize" the health information system, and a study to develop a module to convey the concept of PHC to government officials. The major activity to be undertaken was a study to test the decentralization of PHC planning and management.

This last study became known as the "Decentralization Demonstration Project". A Steering Committee was established within the MOPH to oversee the project, and it agreed that the study should be conducted in two stages: 1) a 6-12 month study of the feasibility of decentralization; and 2) a 12-24 month study to test a decentralized model in one province.

1.2 Study Site

The Committee also agreed that the province should be located in the Northeast and be as typical as possible of the average province. Srisaket Province was selected. The OPHC contacted the Provincial Chief Medical Officer (PCMO), Dr. Swai Muangthai, who agreed to host the study.

Srisaket is one of the more economically-depressed areas of Thailand. It is located on the Kampuchean border approximately eight hours from Bangkok by road or rail. Although the northeast is Thailand's most homogeneous region, Srisaket is notable for its socio-culturally diverse population. There are Thai-speakers, Khmer-speakers and other language groups that are totally distinct from one another. Buddhism is predominant, but spirit worship and faith healing are important in remote rural areas. The social and cultural contrasts are associated with

differences in the health and economics of the 1,700 villages of Srisaket.

The MIU assigned a Research Assistant to the PCMO, provided technical assistance from its Bangkok-based staff, and PRICOR also provided technical assistance and funding in designing and conducting the substudies needed to assess the feasibility of decentralization and the development and testing of a decentralization model. The PCMO contributed office space and assigned several staff to the project. Over the next six to eight months, roughly from April-November, 1987, the tripartite team of PCMO-MIU-PRICOR designed and conducted a series of studies, of which the Systems Analysis was one.

1.3 PHC in Srisaket

Primary Health Care is the government's strategy to raise health standards in all households of Thailand, regardless of socio-cultural characteristics and priorities. As practiced in Thailand, PHC is community-oriented, relying on local volunteers for information collection and dissemination, services and referrals.

PHC services are delivered primarily from tambon (subdistrict) health centers, of which there are over 170 in Srisaket province. Each health center has a catchment area of approximately 10 villages, and each village has one village health volunteer (VHV). The health center is staffed by a female auxiliary midwife and a male junior sanitarian, both of whom have high school educations and about two years formal training. The VHV is a literate, unsalaried local resident who receives six weeks of training in basic primary health care services.

In accordance with international terminology, PHC in Thailand encompasses the eight key areas of health education, endemic disease control, sanitation/water supply, immunization, nutrition, simple medical care, MCH-family planning, and essential drugs. Recently, Thailand has added dental and mental health to this list.

The program emphasis in Srisaket, however, is on six child survival interventions, notably:

1. Immunization of children (EPI)
2. Growth monitoring and nutrition (GMN)
3. Oral rehydration therapy (ORT)
4. Antenatal care (ANC)
5. Family planning (FP)
6. Clean water and sanitation (SAN)

These were the PHC interventions upon which the study concentrated.

2.0 METHODOLOGY

2.1 Overview

In the first year of the project (1987), 6 of Srisaket's 16 districts were chosen as sites for field activities. The selection of these districts was based on their primary health care achievement according to provincial service statistics. The six districts were selected from three strata for high, medium and low PHC performance.

Relative PHC Care Achievement Status Six Experimental and Control Districts Srisaket, 1986

District Name -----	Rank ----	Assignment -----
Rasisalai	High	Experimental
Praibung	High	Control
Kantararom	Medium	Experimental
Prangku	Medium	Control
Sriratana	Low	Experimental
Kukan	Low	Control

This ranking was based on district performance in 1986, which compared services provided as a percent of provincially-set targets and as a percent of the estimated number of target population.

A battery of studies was designed and undertaken to gain a comprehensive picture of the FHC system in Srisaket, and to identify areas of program strength and weakness. The overall decentralization strategy was to present this information to the PCMO to enable the provincial health staff to plan and monitor its PHC activities. At the same time, central-level MOPH officials were lobbying in Bangkok for decentralization of authority to give the Srisaket PCMO the power to do its own planning and monitoring.

The studies included:

1. A review of PHC service statistics to identify strong and weak areas of performance;¹

1. Prakrom Vuthipongse. "Summary Report: Design of a Model for Decentralized Primary Health Care Planning and Management at the Provincial Level: Phase I." MIU, Bangkok: July, 1988.

2. Interviews with 381 community leaders to assess the general level of community awareness and support for PHC;²
3. Interviews with district health managers in the six study districts to identify PHC operational problems (staffing, transportation, logistics, referrals, record-keeping, IEC, accounting, purchasing, coordination);³ and
4. A survey of 630 mothers of children under 2 years of age from 210 villages in the 6 study districts to assess PHC/Child Survival coverage rates, as well as mothers' knowledge and behavior with respect to key child survival practices.⁴

The results of these studies confirmed the validity of the principal operational problems identified in the national PHC needs assessment and the stratification of the six study districts into low, medium and high performance categories. For almost all the major PHC indicators, the relative ranking of the six districts was identical for both the service statistics and the sample survey. In addition, the problems identified by the community leaders, district health workers, service statistics and sample survey of mothers were similar.

2.2 Rationale for the Systems Analysis of PHC Interventions

Although these studies identified the deficiencies of PHC service coverage in the target population, these data did not enable the manager to determine whether low performance is the result of service delivery problems or low demand for services.

Thus, during September, 1987 a systems analysis of the PHC service delivery system was conducted in the six districts of Srisaket. The results of the systems analysis were integrated with the findings from the sample survey of mothers in a December, 1987 report.⁵ The qualitative data proved to be

2. MIU and PRICOR. "Studies in Decentralized Primary Health Care Management, Thailand. Report # 1: Study of Community Key Leaders: Primary Health Care Issues in Srisaket Province." MIU, Bangkok: November, 1988.

3. MIU and PRICOR. "Studies in Decentralized Primary Health Care Management, Thailand. Report # 3: Study of Primary Health Care Problems and Issues: Results from Discussions with District Health Workers in Srisaket Province, Northeast Thailand." MIU, Bangkok: November, 1987.

4. MIU and PRICOR. "Studies in Decentralized Primary Health Care Management, Thailand. Report # 2: Study of Mothers with Children Under Age Two: Primary Health Care Coverage in Srisaket Province, Northeast Thailand." MIU, Bangkok: November, 1987.

5. MIU and PRICOR. "Situation Analysis of Primary Health Care in Srisaket Province". MIU, Bangkok: November, 1987.

highly useful in exposing areas of incomplete and incorrect service delivery which the survey data and service statistics did not show.

Because of the special interest in the methodology and results of the qualitative assessment and the need for a more detailed dissemination of the findings, the project staff produced a summary report on the systems analysis.⁶ The present report is a more comprehensive description of the results of the systems analysis.

In the first report, the child survival elements of oral rehydration, growth monitoring and immunization were highlighted since these were the areas where the greatest deficiencies were found and for which the PCMO subsequently decided to take remedial action.

This second report presents the full set of tabulations of the systems analysis for all six PHC elements and for both the implementation and control areas. These baseline findings will serve as a benchmark for comparison with the results of a follow-up survey that is currently underway.

2.3 Objective

The objective of the systems analysis (SA) was to expose weak links in the service delivery and logistics systems that might help explain differences in PHC performance between districts and between PHC elements. This information was to be provided to the PCMO to enable it identify PHC areas that needed attention and to develop remedial strategies to correct deficiencies in the delivery system.

The objective of this report is to provide a detailed discussion of how the Systems Analysis (SA) was carried out and to present highlights of the SA results.

2.4 Systems Analysis Methodology

2.4.1 Overview.

The PRICOR approach to systems analysis was employed. A number of key indicators was selected from the PRICOR Thesaurus for each of the six PHC interventions. Instruments were developed by the MIU-PRICOR staff to collect data on these indicators. A small sample of key intervention activities (e.g., a growth monitoring weighing session, an immunization session) were observed in each of the six study sites. The research team made from 3-15 observations for each activity.

Normally, qualitative data are viewed as subjective information based on a non-scientific sample of in-depth interviews, group discussions or observation. The systems analysis in Srisaket was unique in the way it combined quantitative and qualitative

6. PRICOR-Thailand. "Qualitative Assessment of PHC Interventions". MIU, Bangkok: November, 1988.

techniques to expose weaknesses in primary health care achievement. By using a series of checklists and role-plays the researchers were able to: 1) standardize observation to a high degree; 2) speed data collection and; 3) use a microcomputer to speed data processing and report writing.

The SA went beyond observations of service interactions. The field work also included interviews with local health staff, an inventory of equipment and supply stocks, and interviews with mothers who received services on the day of the observation.

The results of the observations were summarized in tabular and graphic form and presented to the PCMO for discussion. Problem areas needing attention were then identified by the PCMO and remedial action taken. A follow-up systems analysis was scheduled for May, 1989 to determine whether improvements had occurred in the delivery system due to the PCMO's remedial interventions.

This report emphasizes the results of the checklists because they are the most innovative aspect of the SA and they significantly influenced Srisaket action in the second year of the project. A translation of one of the checklists used for this analysis is shown in the Appendix to this report.

2.4.2 Sampling.

The systems analysis was conducted in the same six districts that were the sites for the sample survey of mothers so that the results from the two sources could be integrated. Due to limited time, the research team decided to observe service activities of the six PHC elements in one tambon (subdistrict) per district. (In Thailand there are approximately 10 tambons per district.) The selection of the tambon was based on whether the local tambon health center (THC) planned to conduct EPI and GMN clinics, during the scheduled field work for the SA. If more than one THC had scheduled clinics then one was randomly selected. This selection procedure resulted in visits to 34 health centers and associated villages and the observation of some 6,000 PHC service delivery tasks. Over 600 items of vital equipment and supplies were assessed at the same time.

The unit of observation was a service interaction between a THC worker or a village health volunteer (VHV). In the case of EPI and GMN clinics, where many children receive services, the following sampling guidelines applied. If the number of children attending the clinic was less than ten then service interactions with all ten children and their guardians were observed. If the total number of children attending the clinic was between 11 and 50 cases then 25 percent were observed. If the total number of children was between 51 and 100 then 10 percent were observed.

The small number of observed cases is justified because practitioner behavior is not likely to vary widely among individuals. The tasks observed are the core tasks that must be performed during the intervention. Thus, it is reasonable to believe that a small sample of cases will expose performance deficiencies with a fairly high degree of reliability. Also, it

is not expected that staff behavior will be greatly biased during the observation. The general level of competence and completeness will be revealed because of the detail of the checklist and because the worker or volunteer does not know what tasks are being observed.

THC staff and VHV performance is likely to vary from tambon to tambon, however. For this reason the small sample of tambons per district may introduce a bias when attempting to generalize performance to the district level. Thus, when interpreting the findings it is important to recall that the results are for a single tambon team of workers from each district and may not reflect the overall district performance level.

2.4.3 Observer Data Collection.

During September and October, 1987, three teams of observers visited one tambon in each of six districts. Each team was composed of two PRICOR project staff, one representative from the provincial chief medical office and a physician from the local district hospital.

To observe growth monitoring and immunization sessions, the observer teams scheduled their visits to tambon health centers to coincide with a weighing or immunization clinic. If the clinics were conducted in a village setting the team travelled to the village to observe the session.

In the case of diarrheal disease control (ORT) it was not always possible to observe a spontaneous interaction between the health staff and a sick child. Thus, role playing was used as a substitute. For the role play, a village mother with a child who previously had diarrhea was located and asked to pretend that her child was suffering from an episode of diarrhea. Local health staff and village volunteers were then asked to demonstrate how they treat such a case while the research teams observed. Role play was also employed to observe family planning client education and clean water and sanitation promotion activities. Finally, exit interviews with mothers of children attending GMN and EPI clinics were carried out to see how much information was absorbed from the health education interaction.

2.4.4 Checklists.

A translation of the checklist for growth monitoring is contained in Appendix A. The content of the checklists generally covers preparation, screening, service delivery, recording information and health education. The checklist requires the observer to make a judgement as to whether a specific subtask was done at all or done correctly. Each observer had a set of guidelines which defined each task and specified what constitutes correct or incorrect implementation. The six checklists were drawn from the PRICOR Thesaurus and materials used in a PRICOR Systems Analysis in Zaire, and adapted to the Thai rural setting. Each checklist was then translated into Thai, pre-tested and revised.

The checklist items cited in the tables and bar charts are labelled for easy reference. The labelling convention is to

assign the letter "V" to a variable, followed by the column number where the value of the variable is located in the computerized data file. For example, the following are some of the variables from the Growth Monitoring & Nutrition checklist:

- V11 Visually evaluates child
- V12 Pinches skin
- V18 Checks accuracy of scale
- V19 Removes child's clothing
- V25 Plots weight for age correctly
- V32 Explains (to mother) whether child has gained weight
- V34 Encourages mother to return for next session

Exit interviews with mothers or guardians of the children were conducted and responses to simple yes/no questions were also recorded in checklist fashion. For example, the GMN checklist contains the following items:

- V35 Mother knows child's nutritional status
- V39 Mother knows date of next weighing clinic

2.4.5 Data processing.

The checklist items were given codes of 1 or 2 and transferred directly to a microcomputer for the simple tabulations and graphs that are presented and discussed in the next section. All variables were coded so that a score of 1 means done, correct or complete, i.e., a positive rating. Conversely, a score of 2 denotes not done, incorrect or incomplete, i.e., a negative performance rating. The code 9 is assigned when an observation was not made. Thus, the simplest indicator is the percent of cases scored 1 of all observations. When a portion of the observations are missing the percent is calculated based on the adjusted total.

3.0 RESULTS

Over 6,000 observations of clinic staff, village volunteers and the children and mothers receiving services were attempted. Of 6,017 scheduled observations, 216 were missed for a completion rate of 96.4 percent. The most common reason for a missing observation was that a service (e.g., an immunization) was not provided. The results are presented in three segments: supplies and stocks of equipment, mass clinic performance, and provider-client interaction.

3.1 Supplies and Equipment

Figures A, B, C and D with accompanying Tables 1 through 5 show that stocks of supplies stocks were only a problem for family planning and sanitation educational services. The essential equipment and supplies for conducting antenatal and immunization clinics were, for the most part, adequate in all health centers. Where there was a shortage it was seen in both experimental and control areas, such as the uterine sound (V14) for ANC, and health education materials (V20, V21, V22) for EPI. The GMN clinics were well-stocked with weighing equipment but lacked

educational posters, flip charts, pamphlets and other media for health education of parents.

The checklists for family planning supplies focused on educational media and found deficiencies at the village level for all types of supplies. On the other hand, the health centers in the intervention area were well equipped. None of the health centers in the control area had any of the educational flip charts, pamphlets, posters or a pelvic model.

As with family planning, the experimental area clinics were better stocked than the control area clinics with supplies for sanitation demonstrations. However, both groups of clinics were severely under-stocked for these materials. Materials for demonstrating the construction of water jars and latrines were largely absent and educational posters were found in only 1 of the 6 clinics that were assessed.

3.2 EPI and GMN Clinic Management

The two PHC components that involve providing services to large groups of clients in a short time period (EPI and GMN) were assessed for overall preparation and delivery of service to the target population. The results are presented in Tables 6 and 7.

For EPI clinics all the major steps in conducting a high quality clinic were followed by health centers in both the experimental and control areas. The only variable which requires noticeable improvement is in the proper disposal of used vaccine equipment.

Clinic management was less satisfactory for the GMN weighing clinics, however. The staff neither calibrated the scale properly nor frequently enough. They did not all update the growth charts and no clinics provided sufficient health education to the mother after the weighing.

3.3 Provider-Client Interaction

The checklist is most suited for observing the interaction between the provider and the client. This is the critical area of PHC service delivery which is likely to have the greatest impact on health objectives. Figures E through K graphically depict the service strengths and weaknesses of the clinic and volunteer staff in Srisaket and compare these for experimental and control areas. The graphs are accompanied by Tables 8 through 14.

For all elements for which there was client-provider interaction the control and experimental health services have virtually identical patterns. Within each element there are clear strong and weak points.

3.3.1 Antenatal Care (ANC).

Initially, services were complete for the registration of clients (V19), history-taking (V20) and weighing (V22). However, there were significant lapses in performance in the taking of blood and urine samples (V24, V25) despite the fact that the client was

eligible for these services and that each health center had the requisite equipment (Figure E and Table 8). Tetanus was given in 60 percent of the eligible cases in the experimental area. No ANC clients in the control area were eligible for tetanus toxoid. Very few clients were screened for syphilis (V33). Awareness of the need for referral in the case of uterine bleeding or reported symptoms of hypertension was very low in the control clinics and only moderate in the experimental clinics. However, nearly all of the health center staff reported that they would refer for the more serious indications of high-risk delivery (V38-V40).

3.3.2 Family Planning (FP).

Family planning education and referral performed by village health volunteers and potential acceptors is reviewed in Figure F and Table 9. The VHVs were strong on content but weak on style, and this pattern was identical for the experimental and control areas. The data for the health center midwife at the tambon level also show the same general pattern. The staff at both levels explained the array of contraceptive methods (V17), discussed the pros and cons of each (V19), warned about side effects (V21), and suggested an appropriate method for the client (V23). In the judgement of the observers, however, both the volunteers and clinic staff did not use effective methods of health education. This is partly due to the lack of visual aids, as identified earlier.

3.3.3 Clean Water and Sanitation (SAN).

Figure G and Table 10 present results of the observation of demonstrations of garbage disposal and latrine and water jar construction by three junior sanitarians in each of the control and experimental areas. At least two-thirds of the staff performed nearly all of the tasks correctly and completely. Overall, the three staff in the experimental area districts showed stronger performance than the three staff in the control districts.

3.3.4 Immunization (EPI).

Immunization is provided by auxiliary midwives and junior sanitarians in the clinic setting. The focus of the checklists was on the initial series of vaccinations (BCG, DPT1,2,3, OPV1,2,3 and measles) for children under one year of age.

The quality of immunization interaction was uneven, but identical for the experimental and control area health centers (Figure H and Table 11). Screening for immunization contraindications (V11-V12) was rare and only a minority of staff used a fresh syringe for each child receiving an inoculation (V16). Administration of the vaccine (V17-V24) was done properly but health education for the child's mother or guardian was markedly absent (V26). As a consequence not all mothers knew the date or location of the next EPI clinic nor what side effects to expect for their child (V31, V33, V34).

3.3.5 Growth Monitoring (GMN).

In contrast to ANC and EPI, growth monitoring procedures were less completely and correctly performed. None of the pre-weight child screening was done by any clinic, the health workers assume that the scale was accurately calibrated and no child has its clothes removed before being placed on the scale (Figure I and Table 12). The actual weighing and weight recording were then done reasonably completely. However, staff and volunteer performance dipped sharply with respect to educating the mother or guardian of the child being weighed.

At one session the researchers observed a "weighing team" composed of THC staff and village health volunteers. VHV's were actively involved in the weighing clinic in most of the cases. Usually, the VHV conducted the weighing while the THC worker recorded the data and provided nutrition education to the mother.

Screening of all children for illness is not a standard procedure in the Thailand GMN program. Nevertheless, the staff were observed to see whether they did any screening, particularly whether they looked at the children to rapidly appraise their health status (V11), pinched the child's skin (V12), pressed the child's ankles or feet (V13), or felt the child's forehead for evidence of fever (V14). The weighing clinic staff did not perform any of these activities.

History taking was also virtually absent in the weighing clinics. Staff were observed to see whether they asked the mother or guardian about illnesses since the last weighing (V15), eating habits (V16) and compliance with advice given at last weighing (V17).

Preparation of the scale before weighing is important to ensure accurate measurement of each child. Was the scale calibrated to zero (V18) and tested for accuracy (V19)? Were the child's clothes removed before weighing (V20)? Scale preparation was done in less than 40 percent of the cases observed, and the child's clothes were not removed in any of the observations.

Weighing activities were generally correct in the clinics that were observed. The staff demonstrated their ability to: place the child correctly on the scale (V21); read the weight when the scale was still and balanced (V22); and read the weight as it appeared on the scale (V23).

Recording the child's weight in the growth chart was correctly done in all clinics (V24). Correct plotting of weight for age was incorrect in 40 percent of the cases in the experimental area clinics and 20 percent in the control area (V25).

Nutrition education was assessed on the following variables and was found to be deficient: explaining the child's nutritional status to its mother (V31), informing the mother whether her child's weight had increased or not (V32), talking with the mother about food and eating habits (V33) and encouraging the mother to bring her child again for the next scheduled weighing clinic (V34).

3.3.6 Oral Rehydration Therapy (ORT).

Of all the PHC elements being studied in this systems analysis, oral rehydration was the most poorly delivered. The entire regimen of patient screening and history taking was skipped over by the majority of village health volunteers (Figure J and Table 13) and health center staff (Figure K and Table 14). For VHVs the picture was clear and consistent in both experimental and control areas: Education on the tasks involved in preparing and giving ORS were performed completely and the mothers retained the information. For the 14 health center staff that were observed the service picture was more variable. Generally, the auxiliary midwives and the junior sanitarians were more likely than the VHVs to screen the child for signs of dangerous dehydration and sequelae. However, education of the mother in the use of ORS and the mother's retention of the information was less complete than for the village volunteers.

While nutrition education as performed by the VHVs was generally lacking, client health education on oral rehydration was strong in both experimental and control areas. Other service processes were not as complete however, as the following analysis shows.

Because ORT is a treatment for an illness, history taking and physical examination tasks comprise two-thirds of the checklist. First the VHVs were observed to see whether they took the child's recent health history at all (V12), whether they sought evidence of vomiting (V16), excessive thirst (V17), mucous in stools (V21), the duration of the diarrhea (V23), fever (V24) and the consistency and frequency of stools (V25, V26). Performance was rarely above 40 percent for these tasks. In less than 20 percent of the cases were the following danger signs observed: skin turgor (V13), urine output (V14), lethargy (V15), sunken eyes/fontanelle (V18), dry mucosa (V19) or body temperature (V20).

Although screening, examination and data recording by the VHVs was deficient, health education was strong. In most of the cases, the VHVs instructed the mother or guardian of the child in the preparation of the ORS solution (V29), correctly informed the mother of the amount of salts and solution (V30), the frequency of doses (V31), food supplements during diarrhea (V32) and those symptoms which indicate the need for medical attention (V33). The VHVs also gave the proper advice when asked questions by the mother (V34).

Health center staff performance was higher than the VHVs, but much more erratic. In general, however, staff omitted more tasks in screening of cases than in providing health education.

4.0 CONCLUSIONS

The general conclusions that can be drawn from this systems analysis are that antenatal care, family planning and water and sanitation services are the strongest of the six PHC services observed, although there are some deficiencies.

- o Antenatal care: adequately equipped (except for uterine sounds) and delivered, although the taking of blood and urine samples, screening for syphilis, and provision of TT injections need attention;
- o Family planning: services were performed completely and correctly in the areas that were observed. However, FP health education was constrained by a lack of visual aids at the village level and in some health centers;
- o Water and sanitation: services were performed well, but were hampered by a lack of materials and supplies for demonstrations.

Immunization came next, but there were some glaring gaps in the performance of certain essential tasks.

- o Immunization: there was a significant shortage of educational materials and, perhaps as a result, education and counseling of the mother was poor. Screening was rare, staff did not always use a fresh syringe for each child and did not always dispose of the syringes and needles properly.

The poorest delivered services were oral rehydration therapy and growth monitoring.

- o Oral Rehydration Therapy: Supplies were not a problem. VHVs tended to skip over screening and history taking, did well on education, but were not good referral agents. Health center staff did well on screening but not as well on education.
- o Growth Monitoring: Also short on educational materials and education and counseling were deficient. There was no screening, scales were not properly calibrated, children were weighed with their clothes on, and there were some deficiencies in plotting and updating the growth charts.

In late 1987, the Srisaket and PRICOR team presented the findings of the systems analysis to staff of the provincial office and the three districts in the experimental area to discuss how to resolve service delivery problems that had been identified. The health staff believed that the answers were fairly self-evident. No special OR studies were required to develop or test solutions. Instead, they incorporated the findings of the systems analysis into their planning meetings and determined what could be done over the next operational year given a limited discretionary budget. The result was an operational plan to increase support for equipment and supplies, refresher training in service delivery skills, and a revised supervision model. In particular, the refresher training curriculum drew directly from the results of the systems analysis and concentrated on upgrading the skills of health center staff and VHVs in screening, counseling and

education. The trainers who were selected to implement the program were senior staff from the three districts in the experimental area.

5.0 DISCUSSION

A few key observations arise from this systems analysis. First, the research team discovered that there was remarkable consistency in service delivery patterns within a given health center and for a given worker. That is, a VHV or sanitarian would do things the same way in most situations. Immunization and weighing sessions were done the same way in a given clinic. Thus, it was possible to identify strengths and weaknesses in the delivery system after just a few observations.

Second, there was consistency across districts in both services provided and omissions for many PHC interventions. If one health center did not calibrate the GMN scales, there was a fairly good probability that the same would be true in other health centers. However, there were exceptions. Some centers were well-equipped with family planning educational materials, others were not. But in general, a small sample of districts was more likely than not likely to represent the situation throughout the province.

Third, there was a general pattern across PHC interventions. Health education materials were lacking for many interventions: immunization, growth monitoring, family planning, water and sanitation; and health education activities were weak in many of these services. In addition to the obvious correlation between the two, the systemic problem was readily apparent, again from a limited number of observations.

It would appear that the systems analysis methodology can be a valuable, inexpensive, rapid and powerful tool for identifying PHC service delivery strengths and weaknesses. The key factors that appear to have made the systems analysis successful in Thailand were the specificity of the checklists, the multi-disciplinary observer teams, the analysis and presentation of results by the observer teams and the joint solution development between the observer teams, district managers and service providers.

If this approach is to be applied elsewhere, the following recommendations proposed:

- 1) A major advantage of the checklist is that the results can be quantified for rapid statistical and graphic analysis. The indicators are not exhaustive, but represent key inputs and processes that are essential for the provision of quality care. By limiting the observations to a few of these key indicators, the health staff can quickly determine whether a service is operating effectively or not. The indicators also suggest what needs to be corrected, thus simplifying the solution development tasks and allowing health staff to go directly from problem identification to corrective action. Finally, the sample of observations can be drawn to represent a narrow (district) or

broad area (province) of analysis. Thus, it has a great deal of flexibility as a diagnostic and evaluative tool.

2) The Srisaket experience showed that variation in staff performance within a clinic is low, whereas variation is higher across clinics. Therefore, it is highly recommended that many clinics be sampled and only one or two cases be observed per clinic. This approach should produce a highly reliable assessment of staff performance over a large area at a reasonable cost.

3) When observing services in a mass clinic setting, where several staff perform different functions, it is important to indicate on the checklist the category of staff observed. For example, if VHV's do the weighing in a GMN clinic while trained health staff do the nutrition education then the checklist should indicate this, since performance is likely to vary by type personnel.

4) Even though a small sample of children may be selected for observation at a GMN or EPI clinic, the total number of children attending the session should be recorded as a control variable. The size of the clinic and the ratio of staff to clients can affect the quality of services. For example, immunization clinics in rural settings are generally conducted on a pre-arranged date for all the children in the area. During the systems analysis it was observed that a large group of children results in: hurried activity among the THC staff, loud noise of children crying, and the continuous movement of children and their guardians through and around the health center. This makes it difficult for the staff to provide adequate screening, education and counseling. In one health center which had only three immunization cases, all three received health education whereas there was no health education in two clinics with nine and 20 children respectively.

5) The checklist should only include tasks for which the service providers have been trained. This was not done in the case of GMN pre-weighing screening and the staff who were observed during the SA understandably protested when the results were presented in the debriefing.

6) This study has shown that qualitative data based on the observation of carefully defined tasks can be quantified and analyzed by microcomputer. Other countries and programs that wish to supplement the standard battery of service statistics and sample surveys are encouraged to develop and employ a checklist methodology on a representative sample of service points as an essential component of any problem diagnosis exercise.

6.0 IMPLICATIONS FOR THE FOLLOW-UP ANALYSIS

The most important finding in this analysis is the very close, sometimes nearly identical, service behavior patterns of the health staff and volunteers in the experimental and control areas. This finding lends strong support for the quality of the research design and demonstrates that the sample represents a

homogeneous population of service providers. The staff and clinics in both areas have very similar weaknesses and, therefore, any differential impact of the project interventions during 1988 and the first half of 1989 should be clearly reflected in a departure from the pattern displayed in the baseline systems analysis.

The analysis also showed that some areas of PHC service leave more room for improvement than others. For example, there is little chance of observing any measurable change in clinical supplies for ANC, EPI and GMN. However, supplies for health education in EPI and GMN should improve noticeably in the experimental areas. It follows that health education services in the EPI and GMN clinics should also improve as a result.

Improvements should be observed in staff knowledge of ANC education messages and when to refer high-risk pregnancy cases to district hospitals. Both GMN and ORT staff at the clinic and village level have an opportunity to greatly improve pre-service screening of infants and young children.

Although family planning services are generally superior to other PHC services in both the experimental and control areas, there is room for improvement in stocks of education materials and in the method of delivering the information.

From this analysis it does not seem that there is much opportunity for improved demonstrations of water and sanitation procedures due to the generally high performance level in the experimental area clinics. However, significant improvements in stocks of supplies and equipment are anticipated in the experimental area health centers.

In sum, the stage is set for a follow-up systems analysis of the PHC interventions in Srisaket to identify improvements in the service delivery system. The third and final report of the systems analysis will present these findings in full.

Appendix A

Checklist for Under 5s Growth Monitoring Clinic

(Provider-Client Interaction)

BACKGROUND INFORMATION

Child's name _____ Mother's name _____
Time interaction began _____ Time interaction ended _____
Health provider being observed: AMW ___ JS ___ VHV ___

RAPID APPRAISAL OF CHILD

V11 visually evaluates child	Y	N
V12 pinches skin	Y	N
V13 presses fingers on ankles/feet	Y	N
V14 feels forehead	Y	N
V15 asks if ill since last weighing	Y	N
V16 asks about eating habits	Y	N
V17 asks if followed last advice	Y	N

WEIGHING AND RECORD KEEPING

V18 scale is calibrated to 0	Y	N
V19 tests scale for accuracy	Y	N
V20 removes child's clothing	Y	N
V21 places child on scale correctly	Y	N
V22 reads weight when scale is balanced	Y	N
V23 reads weight correctly	Y	N
V24 records weight accurately	Y	N
V25 plots weight for age correctly	Y	N
V26 calculates age correctly	Y	N
V27 confirms child's age	Y	N

COUNSELS MOTHER/GUARDIAN

V31 explains nutritional status to mother	Y	N
V32 explains whether gained weight or not	Y	N
V33 explains appropriate feeding practices	Y	N
V34 encourages to return for next clinic	Y	N

EXIT INTERVIEW WITH MOTHER

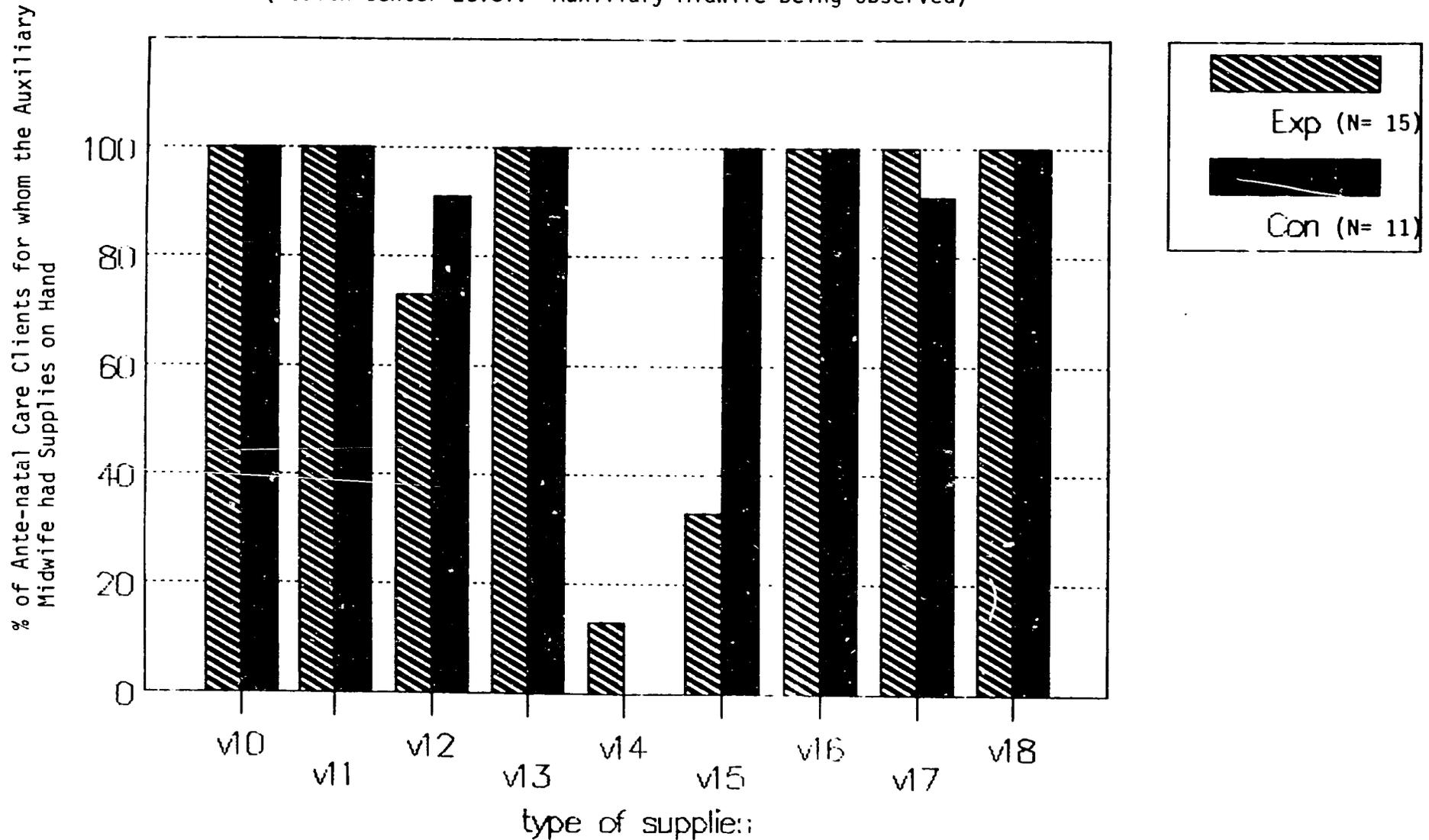
V35 mother knows whether child malnourished	Y	N
V36 mother knows nutritional status grade	Y	N
V37 mother knows good feeding practices	Y	N
V38 mother knows site of next weighing	Y	N
V39 mother knows date of next weighing	Y	N

Figure A

ANC Clinic Management

% With Supplies on Hand

(Health Center Level: Auxiliary Midwife Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 1

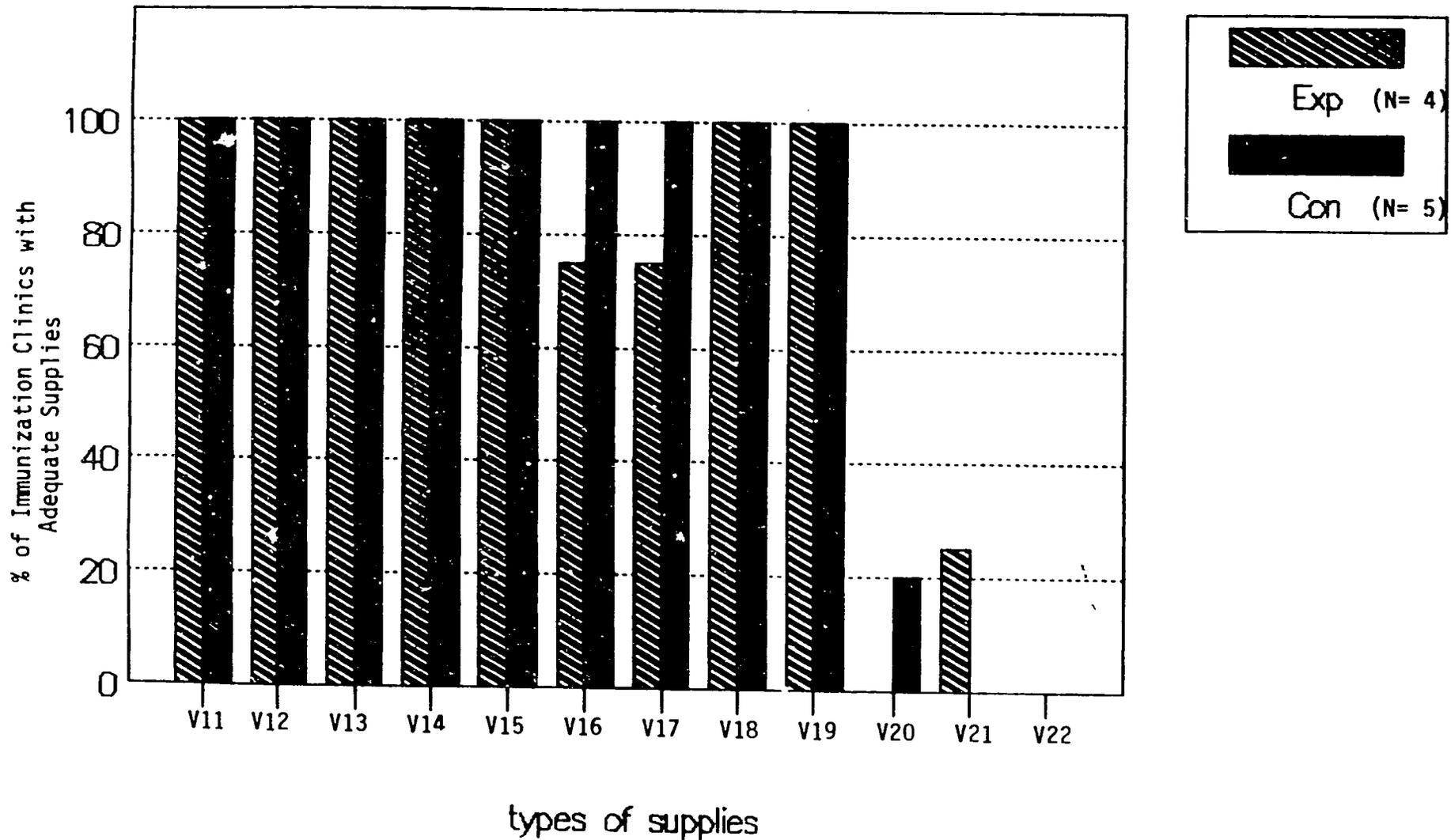
ANC - Clinic Management Supplies		% With Supplies		Missing Observations	
		Exp (n = 15)	Cont (n = 11)	Exp	Cont
v10	Log book	100	100	0	0
v11	Scale	100	100	0	0
v12	HG set	73	91	0	0
v13	Sphygmomanometer	100	100	0	0
v14	Uterine sound	13	0	0	0
v15	Fetal stethoscope	33	100	0	0
v16	Needle and syringe	100	100	0	0
v17	Tetanus vaccine	100	91	0	0
v18	Educational materials	100	100	0	0

Figure B

EPI Clinic Management

% With Adequate Supplies

(Health Center Level)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 2

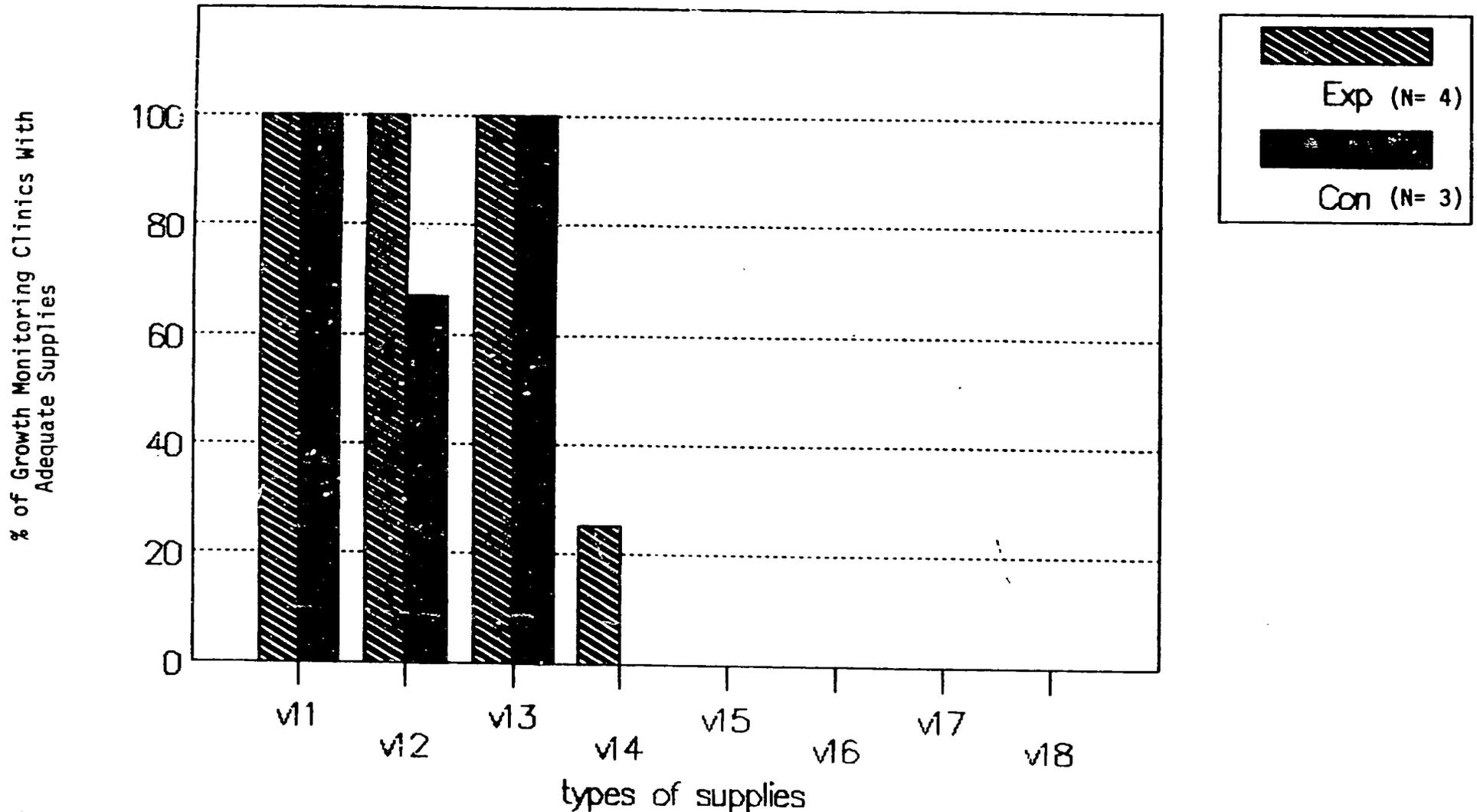
Task / Activity		% with supplies		Missing Observations	
		Exp (n=4)	Cont (n=5)	Exp	Cont
EPI - Clinic Management					
Vaccine Supplies					
v11	BCG	100	100	1	0
v12	DPT	100	100	1	0
v13	OPV	100	100	1	0
v14	Measles	100	100	0	1
v15	Tetanus toxoid	100	100	1	3
v16	Needles/syringes	75	100	0	0
v17	Cotton gauze	75	100	0	0
v18	Alcohol	100	100	0	0
v19	EPI cards	100	100	0	0
v20	Educational posters	0	20	0	0
v21	Flip chart	25	0	0	0
v22	Pamphlets	0	0	0	0

Figure C

GMN Clinic Management

% With Adequate Supplies

(Village Level: Village Volunteer and Health Center Staff Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 3

GMN - Clinic Management Supplies		% With Supplies		Missing Observations	
		Exp (n = 4)	Cont (n = 3)	Exp	Cont
v11	Scale	100	100	0	0
v12	Growth Charts	100	67	0	0
v13	Weight logbook	100	100	0	0
v14	Educational posters	25	0	0	0
v15	Flip chart	0	0	0	0
v16	Pamphlets	0	0	0	0
v17	Slides	0	0	0	0
v18	Films	0	0	0	0

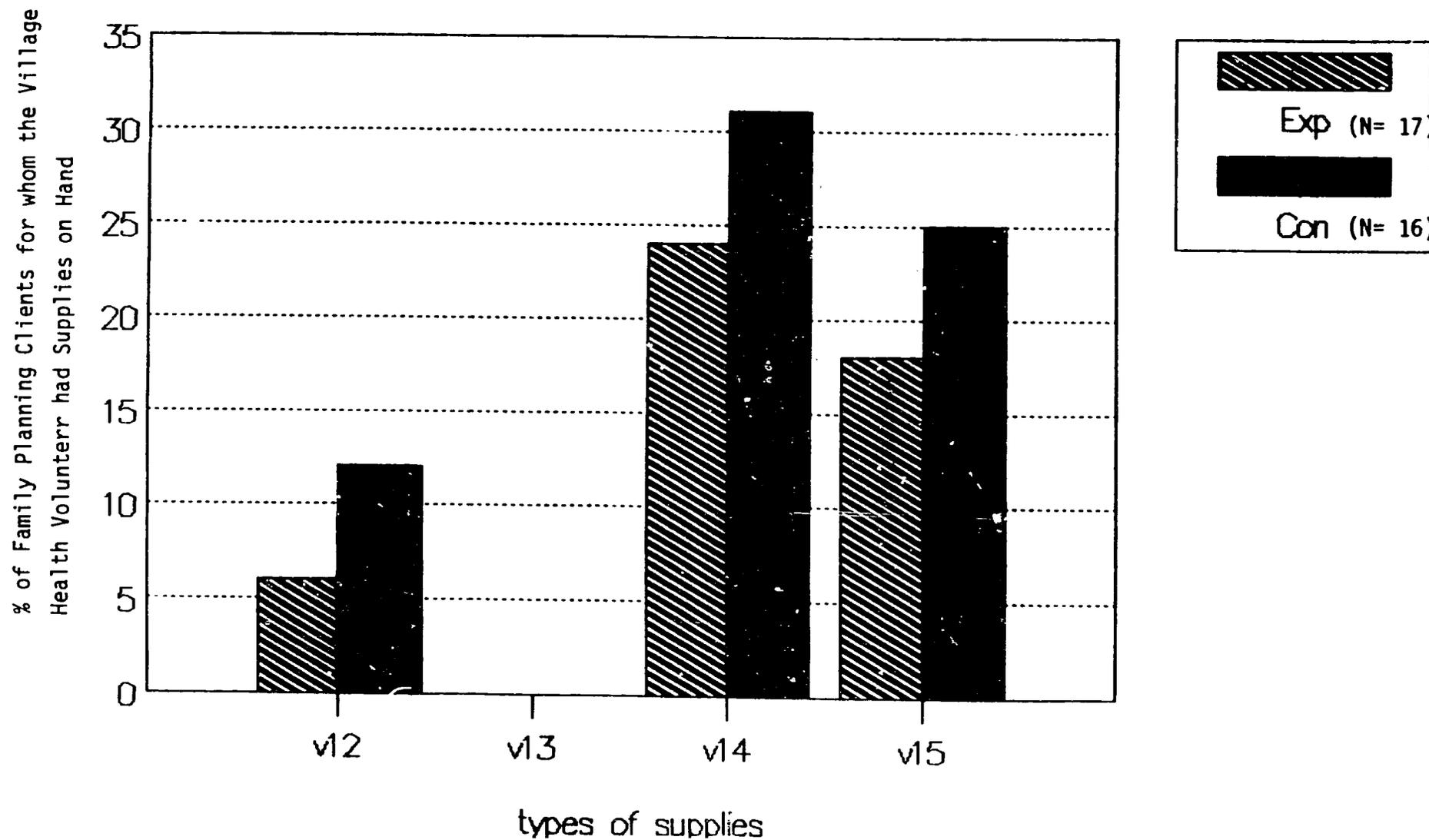
Figure D

92

FP Clinic Management

% Have Supplies at Hand

(Village Level: Village Health Volunteer Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 4

FP - Clinic Management (village level) Supplies		% With Supplies		Missing Observations	
		Exp (n = 17)	Cont (n = 16)	Exp	Cont
v12	Educational flip chart	6	12	0	0
v13	Pelvic model	0	0	0	0
v14	Pamphlet	24	31	0	0
v15	Poster	18	25	0	0

FP - Clinic Management (tamboon level) Supplies		% With Supplies		Missing Observations	
		Exp (n = 8)	Cont (n = 6)	Exp	Cont
v12	Educational flip chart	75	33	0	0
v13	Pelvic model	88	0	0	0
v14	Pamphlet	75	0	0	0
v15	Poster	88	0	0	0

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SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 5

Sanitation - Water Supply		% With Supplies		Missing Observations	
Supplies		Exp (n = 3)	Cont (n = 3)	Exp	Cont
v11	Latrine bowl	33	33	0	0
v12	Latrine frame	33	0	0	0
v13	Mold for latrine frame	33	0	0	0
v14	Mold for water jar	33	0	0	0
v15	Garbage incinerator	0	0	0	0
v16	Flip chart	0	0	0	0
v17	Posters	0	33	0	0
v18	Pamphlets	0	0	0	0

SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 6

EPI - Clinic Management Immunization Procedures		% done correctly		Missing	
		Exp (n = 4)	Cont (n = 5)	Observations Exp	Cont
v23	Cleaning needles	100	100	0	0
v24	Maintain cold chain	100	100	0	0
v25	Check expiry date	75	80	0	0
v26	Handling of unused vaccine	100	100	0	0
v27	Handling of used vaccine	100	100	0	0
v28	Checks child's EPI card	75	100	0	0
v29	Record vaccine in EPI card	100	100	0	0
v30	Complete update of EPI card	100	100	0	0
v31	Gives education to mother	100	40	0	0
v32	Proper disposal of vaccine	50	0	0	0

SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 7

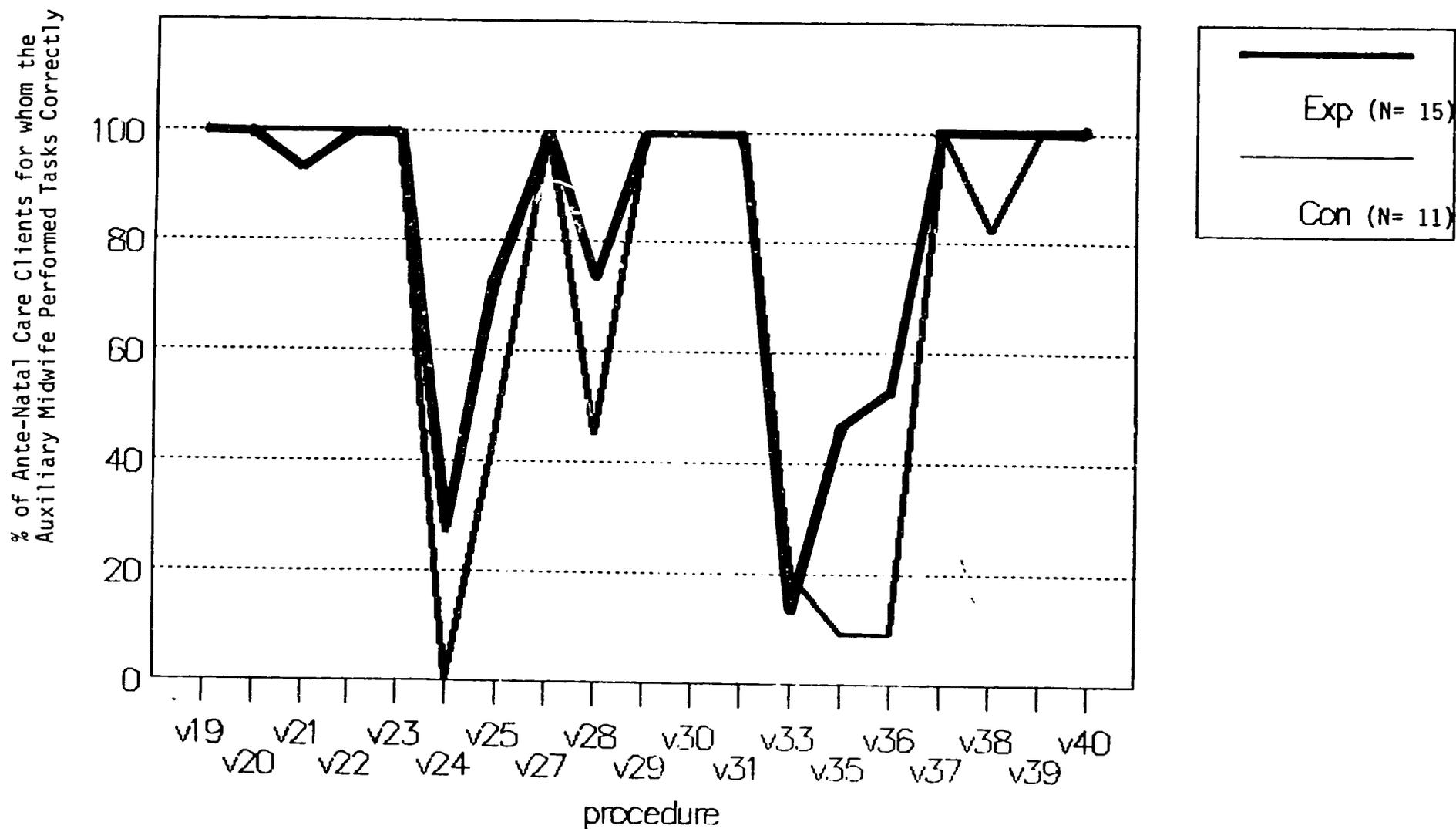
GMN - Clinic Management Weighing Procedures		% done correctly		Missing	
		Exp (n = 4)	Cont (n = 3)	Observations Exp	Cont
v19	Sets scale to 0	75	33	0	0
v20	Calibrates scale	25	0	0	0
v21	Registers name of child	100	100	0	0
v22	Checks for child's gr. chart	50	67	0	0
v23	Records weight in gr. chart	50	67	0	0
v24	Plots weight in gr. chart	50	67	0	0
v25	Gives education to mother	50	0	0	0
v26	Sufficient educ. for mothers	0	0	0	0
v27	Warning for high risk cases	100	100	0	0
v28	Referral for high risk cases	100	100	0	0

Figure E

ANC Provider Client Interaction

% Procedures Done Correctly

(Health Center Level: Auxiliary Midwife Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 8

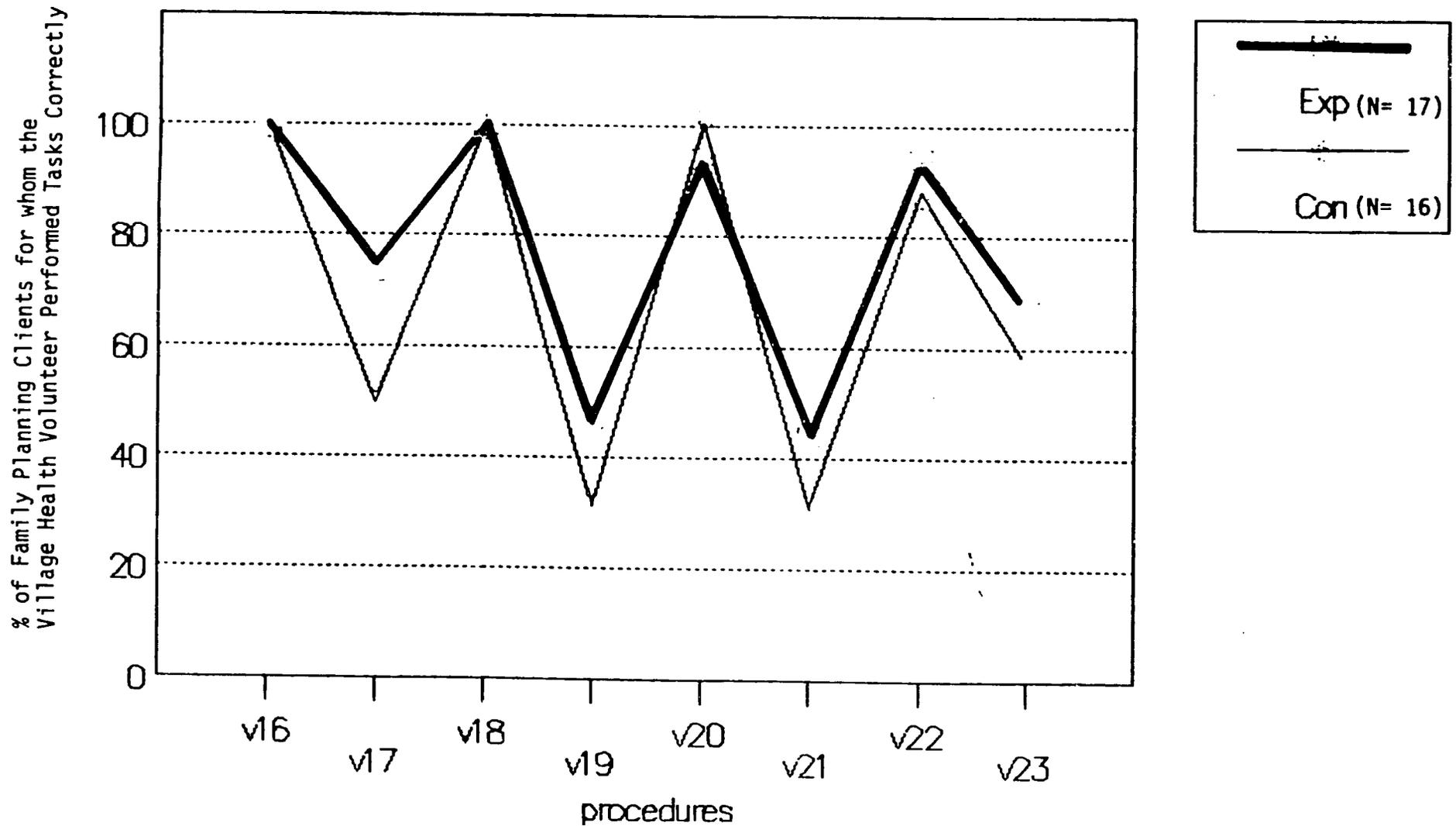
ANC - Provider:client interaction	% done correctly		Missing Observations	
	Exp (n = 15)	Cont (n = 11)	Exp	Cont
v19 Enter client name in logbook	100	100	0	0
v20 Takes history	100	100	0	0
v21 Evaluates physical condition	93	100	0	0
v22 Weighs client	100	100	0	0
v23 Records blood pressure	100	100	0	0
v24 Takes blood sample	27	0	0	0
v25 Takes urine sample	73	46	0	0
v26 Gives tetanus vaccine	60	missing	0	11
v27 Fetal examination	100	100	0	0
v28 Gives ANC education	73	45	0	0
v29 Makes next appointment	100	100	0	0
v30 Records result in mother card	100	100	0	0
v31 Checks eligibility for TT	100	100	0	0
v33 Checks eligibility for VDRL	13	20	0	0
v35 Would refer if bleeding	47	9	0	0
v36 Refer hypertension (history)	53	9	0	0
v37 Refer hypertension (exam)	100	100	0	0
v38 Refer if fetal abnormality	100	82	0	0
v39 Refer:abnormal fetal position	100	100	0	0
v40 Refer: prolonged labor	100	100	0	0

Figure F

FP Provider Client Interaction

% Procedures Done Correctly

(Village Level: Village Health Volunteer Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 9

FP - Provider:client interaction (village level)		% done correctly		Missing Observations	
		Exp (n = 17)	Cont (n = 16)	Exp	Cont
v16	Explains FP methods: content	100	100	0	0
v17	Explains FP methods: style	75	50	1	0
v18	Explains pros/cons: content	100	100	0	0
v19	Explains pros/cons: style	47	31	0	0
v20	Explains side effects:content	94	100	1	0
v21	Explains side effects: style	44	31	1	0
v22	Suggests FP method: content	94	88	1	0
v23	Suggests FP method: style	67	57	2	0

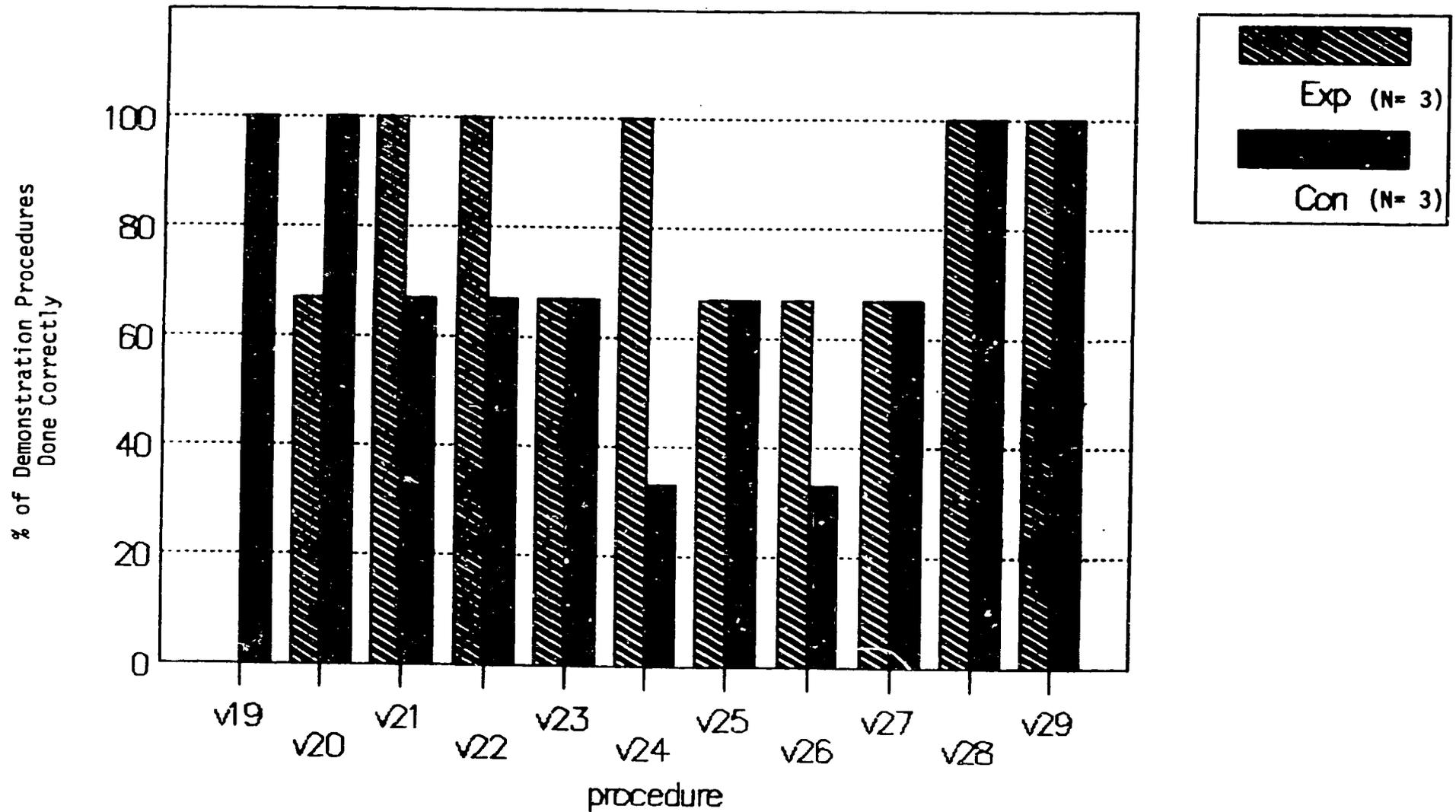
FP - Provider:client interaction (tambon level)		% done correctly		Missing Observations	
		Exp (n = 8)	Cont (n = 6)	Exp	Cont
v16	Explains FP methods: content	100	67	0	0
v17	Explains FP methods: style	75	50	0	2
v18	Explains pros/cons: content	100	67	0	0
v19	Explains pros/cons: style	38	100	0	2
v20	Explains side effects:content	100	83	0	0
v21	Explains side effects: style	25	100	0	2
v22	Suggests FP method: content	100	67	0	0
v23	Suggests FP method: style	50	75	1	2

Figure G

Sanitation Demonstration

% Procedures Done Correctly

(Junior Sanitarian Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 10

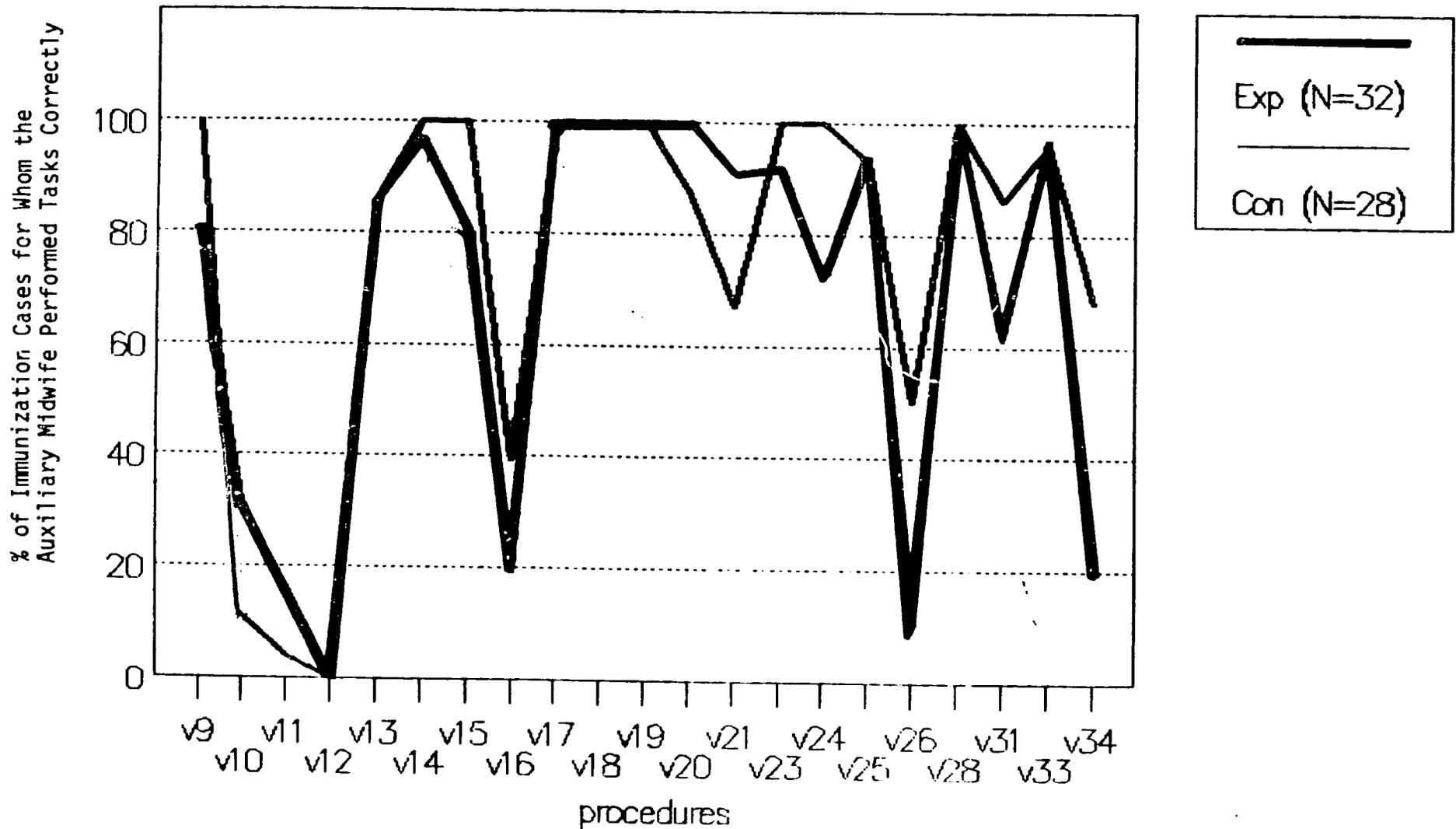
Sanitation - Water Supply		% Demonstrating Correctly		Missing Observations	
Procedure		Exp (n = 3)	Cont (n = 3)	Exp	Cont
v19	Burying garbage	0	100	0	0
v20	Burning garbage	67	100	0	0
v21	Depth of latrine pit	100	67	0	0
v22	Air exhaust valve	100	67	0	0
v23	Placement of latrine bowl	67	67	0	0
v24	Maintenance of latrine	100	33	0	0
v25	Mixing of cement (water jar)	67	67	0	0
v26	Mold preparation (water jar)	67	33	0	0
v27	Moisten drying cement jar	67	67	0	0
v28	Maintenance of water jar	100	100	0	0
v29	Cover lid for water jar	100	100	0	0

Figure H

EPI Provider-Client Interaction

% Procedures Done Correctly

(Health Center Level: Auxiliary Midwife Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 11

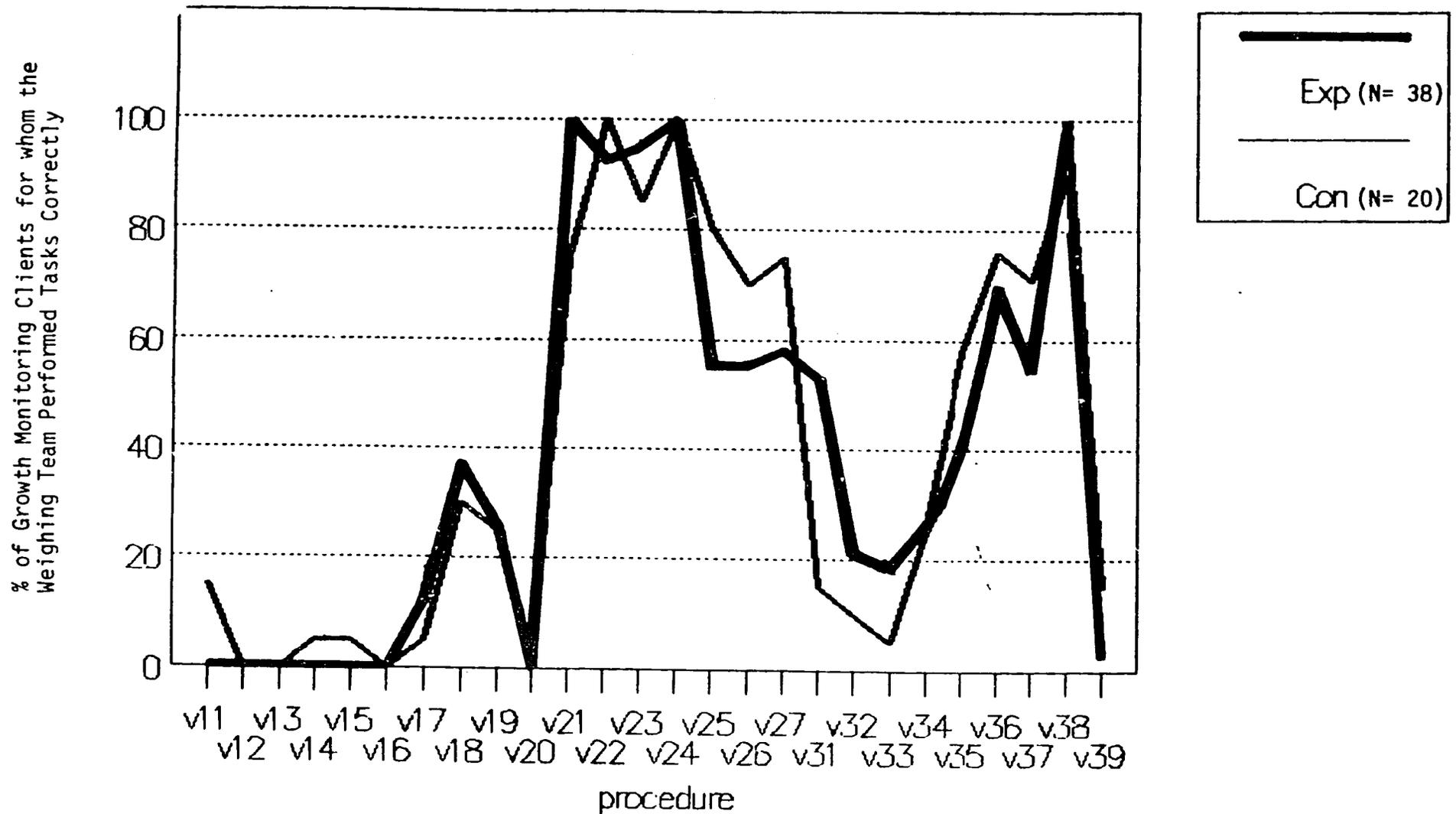
EPI-Provider-Client Interaction	% done correctly		Missing Observations	
	Exp (n = 32)	Cont (n = 28)	Exp	Cont
v9 Checks EPI card data	81	100	0	0
v10 Checks general physical	31	11	0	0
v11 Screens for fever/flu	16	4	0	0
v12 Screens for diarrhea	0	0	0	0
v13 Rejects fever/diarrhea cases	86	86	11	7
v14 Checks name of vaccine	97	100	0	0
v15 Uses sterile needle	81	100	0	0
v16 Uses fresh syringe	19	39	0	0
v17 Checks volume in syringe	100	100	0	0
v18 Cleans vaccine site	100	100	0	0
v19 De-aspirates syringe	100	100	0	0
v20 Angle (90deg) for DPT	100	87	9	5
v21 Angle (90deg) for measles	91	67	21	13
v22 Angle (45 deg) for Tetanus	missing	missing	32	28
v23 Angle (15 deg) for BCG	92	100	20	24
v24 Presses cotton swab on site	72	100	0	0
v25 Records vaccine given	94	93	0	0
v26 Gives education to mother	9	50	0	0
v28 Mother knows child immunized	100	100	0	0
v31 Mother knows next EPI date	62	86	0	0
v33 Mother knows where next EPI	97	96	0	0
v34 Knows side effects to expect	19	68	0	0

Figure 1

GMN Provider Client Interaction

% Procedures Done Correctly

(Village Level: A Variety of Health Center Staff and Volunteers Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 12

GMN-Provider:client interaction		% done correctly		Missing Observations	
		Exp (n = 38)	Cont (n = 20)	Exp	Cont
v11	Visually evaluates child	0	15	0	0
v12	Pinches skin	0	0	0	0
v13	Presses ankle	0	0	0	0
v14	Checks for fever	0	5	0	0
v15	Asks if ill since last weigh.	0	5	0	0
v16	Asks about eating habits	0	0	0	0
v17	Asks if followed last advice	12	5	12	0
v18	Sets scale to 0	37	30	0	0
v19	Checks accuracy of scale	26	25	0	0
v20	Removes child's clothing	0	0	0	0
v21	Places child on scale	100	75	0	0
v22	Reads scale when balanced	92	100	0	0
v23	Reads weight accurately	95	85	0	0
v24	Records correct weight	100	100	0	0
v25	Plots correct child weight	55	80	0	0
v26	Calculates age correctly	55	70	0	0
v27	Mother knows child age	58	75	0	0
v31	Explains status to mother	53	15	0	0
v32	Discusses weight gain	21	10	0	0
v33	Discusses good feeding	18	5	0	0
v34	Reminds of next weighing	26	25	0	0
v35	Mother knows child's status	58	40	0	0
v36	Knows nutritional grade	76	70	0	0
v37	Knows good feeding practices	71	55	0	0
v38	Knows site of next weighing	90	100	0	0
v39	Knows date of next weighing	3	15	0	0

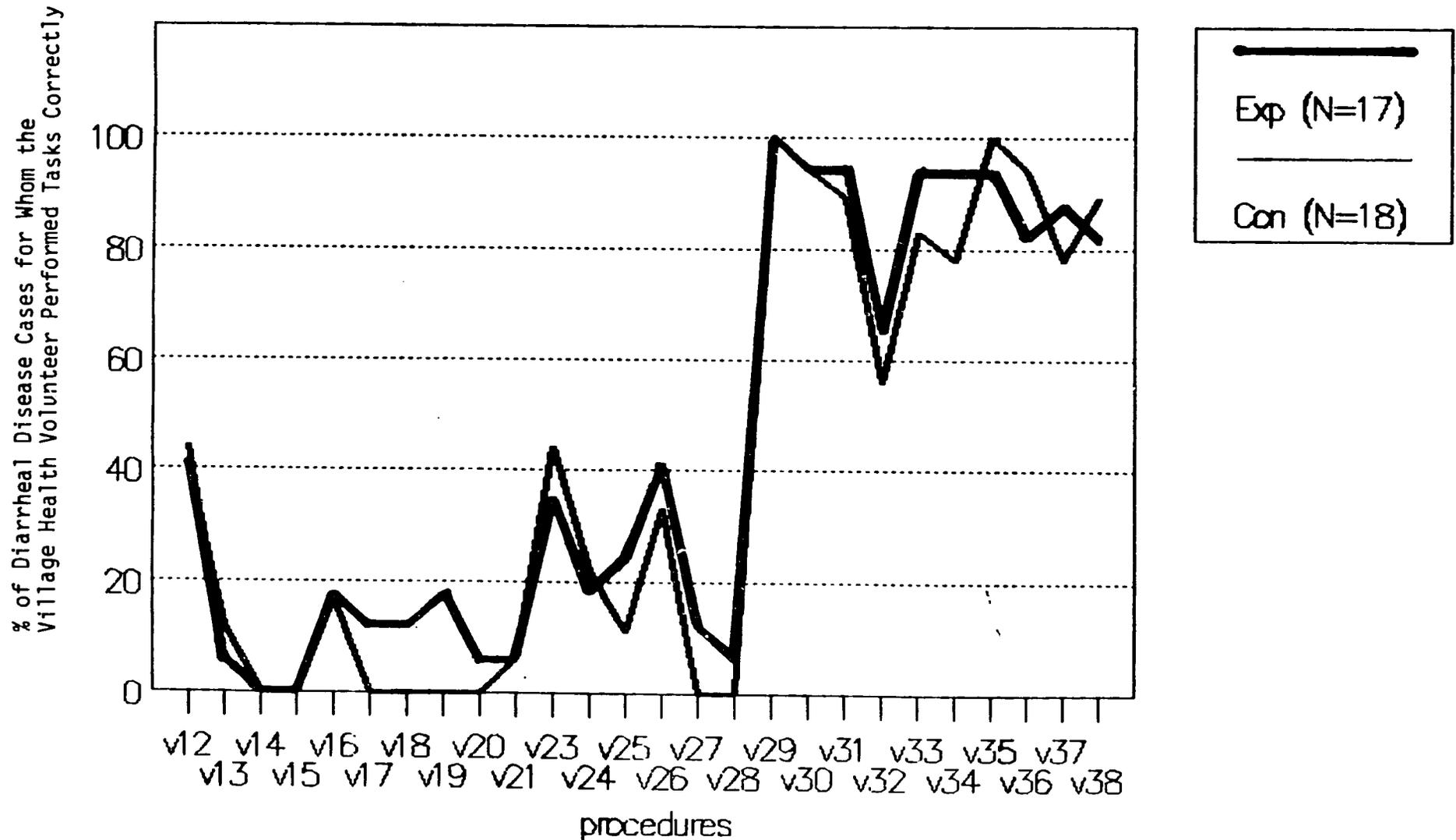
34

Figure J

ORT Provider Client Interaction

% Procedures Done Correctly

(Village Level: Village Volunteers Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 13

ORT-Clinic Management Provider-Client Interaction (Village Level)		% done correctly		Missing Observations	
		Exp (n = 17)	Cont (n = 18)	Exp	Cont
v12	Takes history	41	44	0	0
v13	Checks skin elasticity	12	6	0	0
v14	Checks volume of urine	0	0	0	0
v15	Checks child alertness	0	0	0	0
v16	Asks about vomiting	18	17	0	0
v17	Checks for dehydration	12	0	0	0
v18	Checks eyes	12	0	0	0
v19	Checks mucous membranes	18	0	0	0
v20	Takes temperature	6	0	0	0
v21	Checks for mucous in stools	6	6	0	0
v23	Asks no. of diarr. episodes	35	44	0	0
v24	Asks about fever	18	22	0	0
v25	Asks about tpe of stools	24	11	0	0
v26	Asks about stool frequency	41	33	0	0
v27	Enters information given	12	0	0	0
v28	Allocates to severity level	6	0	0	0
v29	Advises about ORS	100	100	0	0
v30	Ed. on proper ORS solution	94	94	0	0
v31	Ed. on proper ORS salts	94	89	0	0
v32	Ed. on proper child feeding	65	56	0	0
v33	Ed. on importance of check up	94	83	0	0
v34	General education of mother	94	78	0	0
v35	Mother knows correct Rx	94	100	0	0
v36	Mother knows how prepare ORS	82	94	0	0
v37	Mother knows proper volume	88	78	0	0
v38	Mother knows frequency of ORS	82	89	0	0

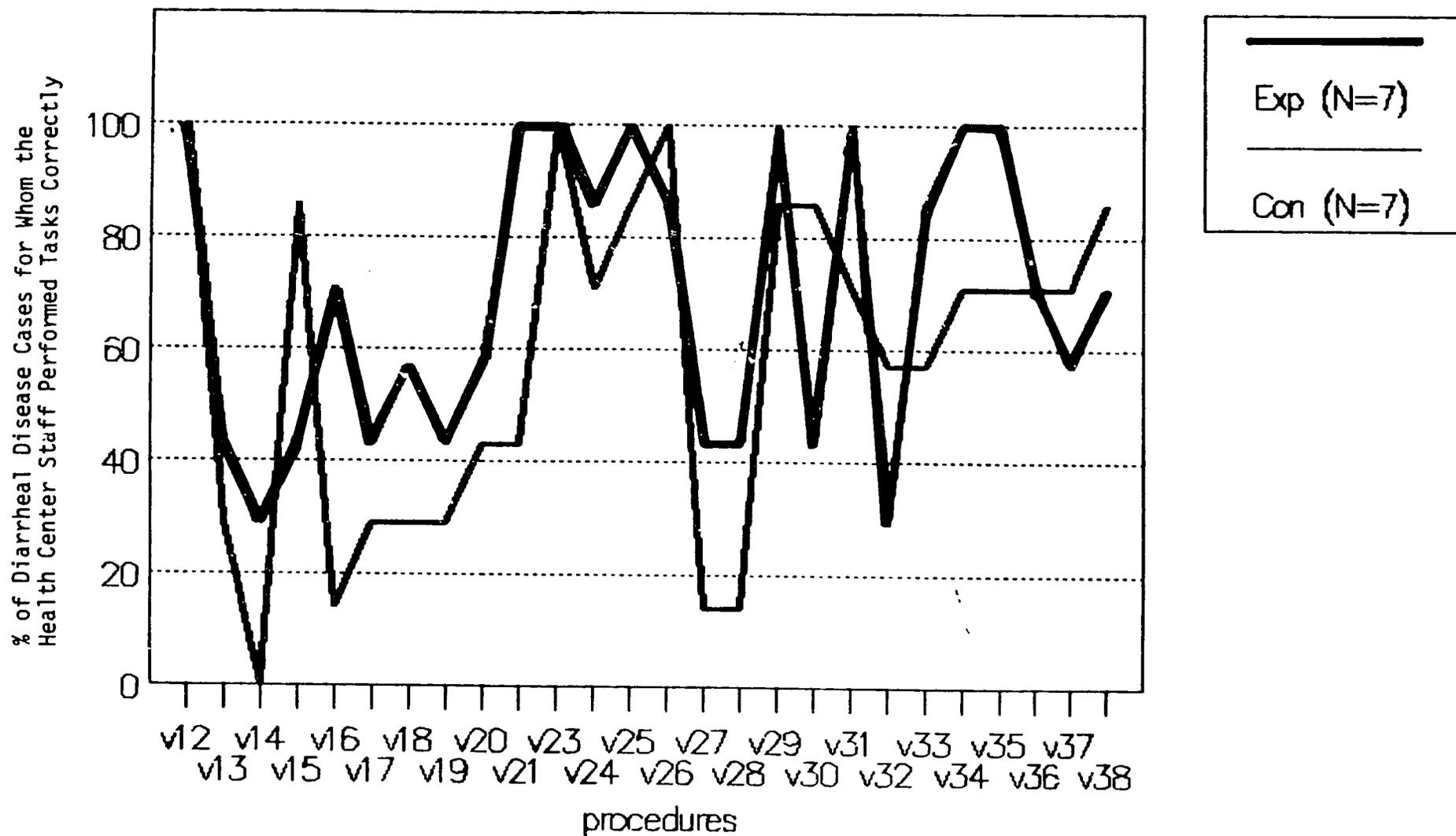
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Figure K

ORT Provider Client Interaction

% Procedures Done Correctly

(Health Center Level: Auxiliary Midwife or Junior Sanitarian Being Observed)



SUMMARY OF QUALITATIVE ASSESSMENT CHECKLIST RESULTS: FALL 1987

Table 14

ORT-Clinic Management Provider-Client Interaction (Tambon Level)		% done correctly		Missing Observations	
		Exp (n = 7)	Cont (n = 7)	Exp	Cont
v12	Takes history	100	100	0	0
v13	Checks skin elasticity	43	29	0	0
v14	Checks volume of urine	29	0	0	0
v15	Checks child alertness	43	86	0	0
v16	Asks about vomiting	71	14	0	0
v17	Checks for dehydration	43	29	0	0
v18	Checks eyes	57	29	0	0
v19	Checks mucous membranes	43	29	0	0
v20	Takes temperature	57	43	0	0
v21	Checks for mucous in stools	100	43	0	0
v23	Asks no. of diarr. episodes	100	100	0	0
v24	Asks about fever	86	71	0	0
v25	Asks about tpe of stools	100	86	0	0
v26	Asks about stool frequency	86	100	0	0
v27	Enters information given	43	14	0	0
v28	Allocates to severity level	43	14	0	0
v29	Advises about ORS	100	86	0	0
v30	Ed. on proper ORS solution	43	86	0	0
v31	Ed. on proper ORS salts	100	71	0	0
v32	Ed. on proper child feeding	29	57	0	0
v33	Ed. on importance of check up	86	57	0	0
v34	General education of mother	100	71	0	0
v35	Mother knows correct Rx	100	71	0	0
v36	Mother knows how prepare ORS	71	71	0	0
v37	Mother knows proper volume	57	71	0	0
v38	Mother knows frequency of ORS	71	86	0	0