

Spokane Regional Health District

1999 Birth Certificate Follow-Back Survey of Childhood Immunizations

Final Report

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Executive Summary

In the summer of 1999 the Spokane Regional Health District (SRHD) was awarded a grant from the Washington State Department of Health, Maternal and Child Health Division to conduct an immunization study of children under two years of age born in Spokane County. This study was conducted, with little exception, following the protocol and methodology developed by the Centers for Disease Control (CDC) as a Birth Certificate Follow Back Survey (BCFBS).

Methodology:

In brief, the methodology calls for a random selection of birth certificates of children born in Spokane County between September 1, 1996 and January 31, 1998. Once found, a brief survey is administered questioning the primary care giver about the child's immunization history in addition to some demographic questions such as age, race and income. At the same time, a consent for verification of immunizations from a health care provider is requested from the primary care giver. A total of 250 birth certificates were selected for the sample. Two-hundred-six surveys were completed for a response rate of 82.7%. A total of 159 signed consent forms were returned signed and usable for pursuing information from their health care provider.

In Spokane County this survey was conducted over the telephone with few exceptions, and consents were mailed to the home following verification of an address. Specifically, a letter of introduction was mailed to the last known address followed by a phone call within seven days of when the letter should have been received by the potential respondent. As a last resort, field visits and a mailed survey were used to increase the response rate. These last two methods yielded very few completed surveys. Extensive tracing was necessary to find a percentage of the respondents, using several sources: the data base from the State Department of Social and Health Services, the National Change of Address, the Health District client data base and the Internet. Detail of these sources and their results can be found in the complete report.

The use of incentives and a public service announcement were also utilized to increase the overall response rate. Respondents were sent a \$2 bill, an immunization refrigerator magnet and a chance to enter a drawing for one of five \$100 gift certificates from a local department store. A public service announcement was also released early during the survey making the community aware of the survey and encouraging those contacted to participate. Likewise, all Health District staff and public health nurses were made aware of the survey and asked to verify its legitimacy to any potential respondents. In summary, this modified, mixed mode methodology proved successful for use in Spokane County.

The Sample:

In the majority of cases (93%), the survey was completed by the mother of the child, indicating she was the primary care giver. Fifty-one percent of the sample indicated they had not moved since the birth of their child. Historically, Spokane has been a very stable population with some in-migration; but once here relatively few residents move within the county. SRHD staff believe this contributed to the success of the modified methodology of a primarily telephone administered survey.

Up-to-date (UTD) status for immunizations is defined as 4:3:1; 4:3:1:3 and 4:3:1:3:4. Specifically this refers to 4 DPT, 3 Polio, and 1 MMR, added to that is 3 Hep B and finally an additional 4 HIB type B. The overall immunization rate defined as UTD using 4:3:1 criteria for any child within the sample was calculated at 71%. This is lower than the 80% coverage for Washington State as reported by the CDC. Details of the UTD status and the breakdown within the sample can be found in the complete report.

Risk Factors and Barriers:

To assess risk factors for Not UTD status of immunizations the combination of 4:3:1 was used as the unit measured for analysis according to: age of respondent, marital status, education, employment, number of persons in the home, number of siblings, multiple residence moves, household income, WIC (Women, Infants, Children) or AFDC (Aid to Families with Dependent Children)/TANF (Temporary Aid to Needy Families) recipient, insurance coverage, multiple providers, number of visits to health care provider in the second year of life and, finally, by barriers to obtaining immunizations.

Each risk factor proved to hold for the Spokane County sample, with no exceptions. That is, if the risk factor was present the immunization status was lower within groups. There was no significant difference between groups by age; 76% of the children of married couples were UTD in their immunization status, and immunization status improved with educational attainment of the parents.

Families who had been recipients of WIC or AFDC/TANF (51.4% of the sample) had slightly lower immunization status. WIC recipients were reported as 66% of the children UTD while AFDC/TANF recipients were calculated as 61%.

Among the notable differences within the sample was the household size. The mean household size in the sample was 4.22 persons. As household size increased up to 7 or more people, the immunization UTD status declined from 89% to 57%. Secondly, an increased number of providers contributed to a lower immunization rate. Only 25% of the children with three or more providers (n=4) were considered UTD.

Specific barriers in the questionnaire were identified as clinic hours, transportation problems, or cost of immunizations. However, very few respondents indicated they had had difficulty obtaining immunizations for their child. Likewise missed opportunities were reported as very low. Among other barriers were awareness, work interference, and personal or philosophical objections; again very few (less than 20 in any one case, less than 10 in most cases) indicated these were barriers to getting their child immunized. Two exceptions might be philosophical objections to a specific antigen, (i.e. varicella) and one respondent indicated the language and process were too vague, citing examples such as the use of words like “mild,” “moderate,” and “severe” in the descriptions of potential reactions.

A total of 160 signed consents were returned and, of those, 158 providers supplied the necessary documentation for use in this study. When analyzing the provider data only the UTD immunization rate for the sample declines slightly, from 71% care giver reported to 65% provider reported.

System Considerations:

Spokane Regional Health District will utilize this data in a number of ways over the next 24 months. As the first concrete information obtained in the area, the data will be shared with the Health District's immunization partners: physicians, mid-level providers, office nurses, care plans, hospitals, and community clinics. Educational information will be provided with this data to help providers improve their practice efforts and reduce missed opportunities. Spokane is also working toward immunization registry within the county and potentially the region. As vaccine providers have been reluctant to assist in the funding of this effort, this data will be used, along with other avenues, as a challenge to improve efforts and gain ongoing, measurable data through the registry. Additionally, this data can be looked at (but not limited to) geographically to see whether there are pockets of under-immunized children in the community where targeted vaccine efforts could be done. This information will also be shared with parents through mailings and media sources to help reinforce the need for immunizations and for parents to be advocates of immunization for their children. Finally, this data provides Spokane Regional Health District with a locally generated and relevant baseline from which to compare immunization data as efforts to continue.

Introduction

The Spokane Regional Health District's (SRHD) 1999 Birth Certificate Follow-Back Survey (BCFBS) of childhood immunizations was funded by a grant from the Washington State Department of Health, Maternal and Child Health Program, Immunization Section. Additional funding was provided by the Health District in the form of in-kind contributions of staff and donations from SmithKline Beecham Pharmaceutical company.

Included in this report is a brief description of the BCFBS methodology and the modifications made by the SRHD. The results are reported in three distinct sections; (a) Methodological Results, (b) Questionnaire Results, and (c) Immunization Coverage Results.

Methodology

The SRHD assessed the immunization status of children born in Spokane County, between September 1, 1996 and January 31, 1998. A random sample of 250 participants was selected from a cohort of 7,000 births which occurred during this time. The BCFBS methodology was first designed by the Centers for Disease Control and has been used nationwide as well as within Washington State. Briefly, the protocol for the BCFBS calls for a random selection of children born in a specified area (county or state) within a specific period of time. The participants were then traced back to a last known address, using the information gleaned from the birth certificate. Most typically, the contact with the participant would be conducted in a face to face interview, with interviewers going to the last known residence address and requesting an audience with the individual. During the interview, consent to obtain provider verification would be requested.

Modified Protocol

The SRHD modified this protocol to conduct the survey primarily by telephone contact and reserved the expense of field visits as a measure of last resort. The process utilized by SRHD followed a two-phase approach. During phase one, letters of introduction were sent to every last known address of each family selected to participate. Phase two began the process of contacting the participants by telephone. A contact flow chart which describes the two-phase process is found in Appendix A.

Incentives

Incentives were used to increase participation rates. The Spokane County BCFBS used two strategies. First, participants were told in the introduction letter they would receive a \$2 bill for participating and, secondly, they were told they would be entered into a drawing for one of five \$100 gift certificates if they returned the Informed Consent document. At the time of the interview, the interviewers sought agreement from respondents to sign a consent for provider verification; whether or not they agreed to complete and sign the consent form, they were informed of the incentives. The \$2 bill and a refrigerator magnet were sent to participants along with the Consent for Release of Medical Records. Participants who returned the consent form, whether signed or not, were entered into the drawing for the gift certificates. The gift certificates were hand delivered to the winners on December 23, 1999.

Public Service Announcement

Using donation moneys from the SmithKline Beecham Pharmaceutical company, a public service announcement (PSA) was designed and produced. The PSA aired on all the local television stations beginning the first week of November 1999. The PSA, promoting

immunizations and awareness of the study, continued to cycle through the network PSA rotations into the new year.

Training

During July 1999, DOH Immunization staff, along with representatives from two communities who had conducted BCFBS studies, came to Spokane to conduct training with the SRHD project team. A project coordinator was hired early in September 1999, and interviewers were hired in the latter part of the same month. Interview training was conducted during the last week of September. Actual interviewing of the sample began on October 1, 1999. Appendix B, is the actual timeline of the project progression. The training manual, adapted for Spokane County, is available upon request from the SRHD Assessment/Epidemiology Center.

Methodological Results

Participant Response Results

The original random sample for the Spokane County Birth Certificate Follow-Back Survey (BCFBS) consisted of 250 individuals born between September 1, 1996 and January 31, 1998. One of these individuals actually lived in Stevens County at the time of his or her birth, consequently they were eliminated from the sample, making the usable sample size 249 (See Appendix J)

The interviewers completed 206 questionnaires, resulting in a completion rate of 82.7%. A completion rate of 80% was necessary to generalize the survey results to the entire Spokane County population of pre-school children. The refusal rate was 2.4%. The most common reason given by the six people who refused was discomfort with giving out personal information. The remainder of the sample either would not respond (4.8%) or were not traceable (10%).

Tracing and Contact Results

The original data set included 97 telephone numbers from the birth certificate information; 19 of these numbers were usable and resulted in questionnaire completion. A search of the Department of Social and Health Services (DSHS) records in Olympia produced a substantial number of additional telephone numbers. Internet searches produced 57 telephone numbers (see Appendix C for the list of web sites used for tracing). A search of the SRHD's Women, Infant, Children (WIC) services database produced 3 questionnaire completions. A subsequent search of the SRHD clinic database did not produce any valid telephone numbers or previously unknown addresses. National Change of Address (NCOA) produced 3 additional questionnaire completions.

Figure 1 shows the number of questionnaire completions from each tracing source used in the Spokane County BCFBS.

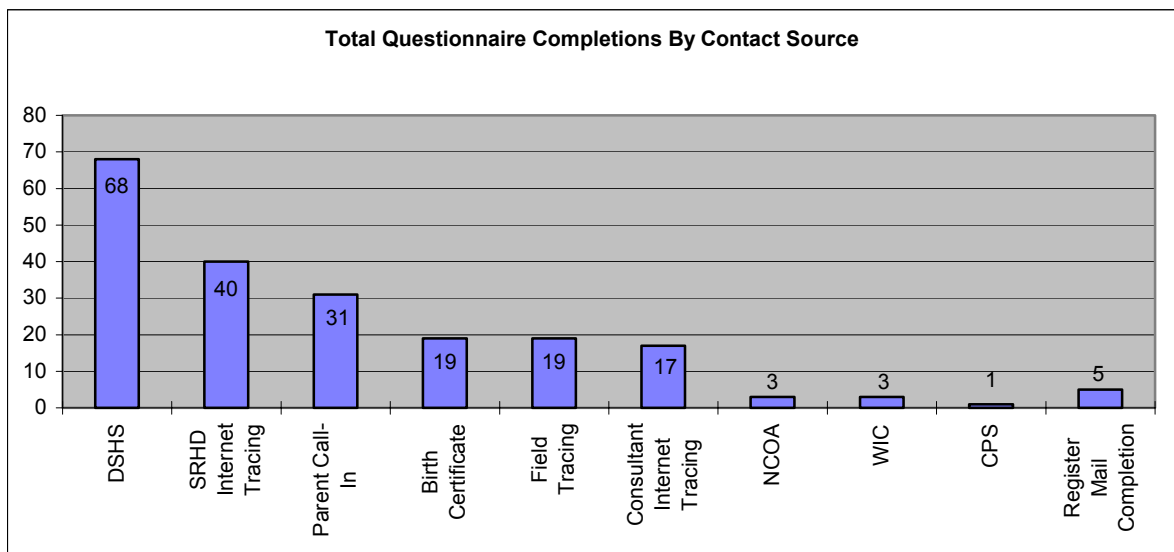


Figure 1: Total Questionnaire Completions by Contact Source

The initial letter of introduction was mailed out to participants on September 22, 1999. This letter informed participants they were randomly selected for the survey and that an interviewer would be calling them over the next few weeks (see Appendix D). A second letter of introduction was mailed on November 4, 1999. This mailing was sent to all participants that were difficult to locate. The second letter reiterated the importance of each sample child being represented in the study and requested the parent or guardian to contact SRHD (see Appendix E). The combination of the two mailings produced 31 questionnaire completions. A total of 327 letters of introduction were mailed to the 249 sample participants. Of these, 116 were returned undeliverable.

The average telephone questionnaire completion required 4.7 telephone calls to the respondent. The maximum number of telephone attempts to any one case, before completion of the questionnaire, was 25. The total number of telephone calls placed to respondents in order to complete the 206 questionnaires was 966. In addition to the telephone calls made to respondents, there were 157 tracing telephone calls placed. These calls consisted of attempts to locate relatives and possible Internet matches. In contrast, 433 tracing telephone calls were placed in the attempt to locate the 37 participants who did not respond to letters of introduction or were eventually determined to be untraceable.

Field visits to local addresses began on November 9, 1999. Participants were chosen to receive a field visit if the first letter of introduction had not been returned and if a telephone number was not located via the Internet searches. A door knocker (see Appendix F) was created to leave on the door of participants who were not at home. A total of 19 questionnaire completions were generated through 34 field visits.

On December 6, 1999, letters were sent by registered mail with a request to participate, a questionnaire, a consent form, a return envelope, one \$2 bill, and a refrigerator magnet (see Appendix G). The packets were mailed to 20 participants for whom telephone numbers were not located, but it was fairly certain the addresses were valid. Five of the questionnaires were returned complete, with a signed consent form. One of the questionnaires was returned with a note of refusal to participate. Six of the registered mail return receipt postcards were signed by one of the sample child's parents. One signature was illegible and seven of the packets were returned either undeliverable or unclaimed. The cost of mailing each packet was \$3.42 which made it a fairly expensive avenue for generating

respondents. The return rate of completed questionnaires using this method was 25% and it confirmed the location of 11 of the sample children.

The survey process started out quickly. Four weeks into interviewing, over 100 of the questionnaires had been completed. At the end of six weeks, 150 questionnaires had been completed. The remaining 56 questionnaires took an additional six weeks to complete. The chart below shows the timeline for completion of the 206 questionnaires.

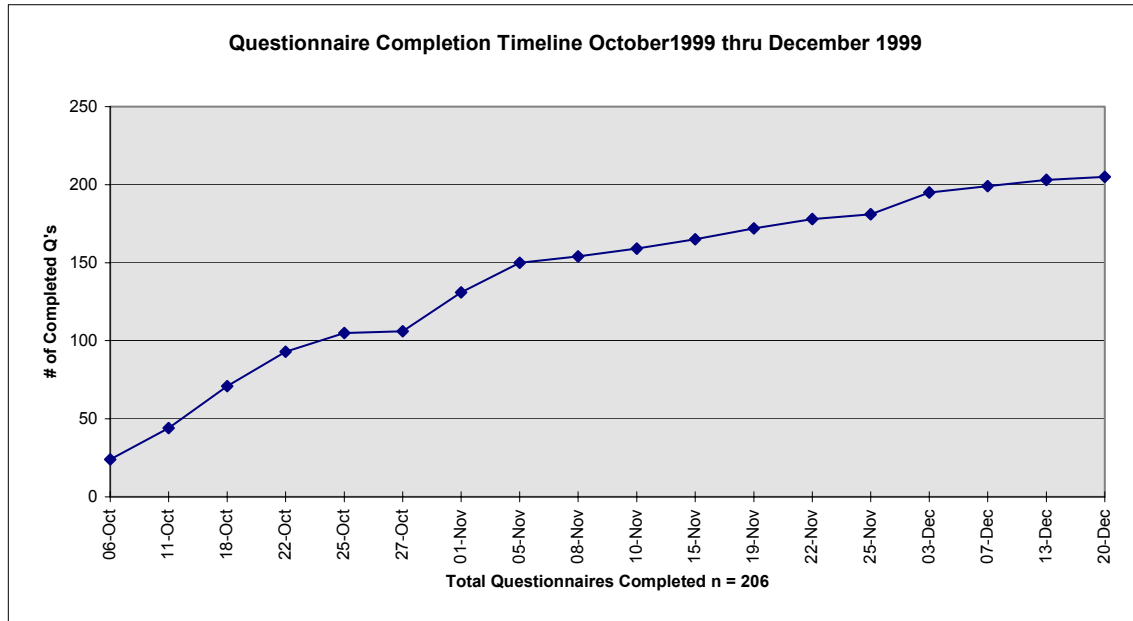


Figure 2: Questionnaire Completion Timeline October 1999 - December 1999

Provider Verification Results

The total number of possible consents for release of medical records was 206. The number of parents who indicated they would sign a consent form during the interview was 192, or 93% of the respondents. Of the 206 consents mailed, 159 were returned signed and 8 were returned unsigned. This resulted in a return rate of 77% usable consent forms.

An introduction fax was sent to all Spokane County Providers on October 27, 1999 (see Appendix H). The fax alerted all of the providers to the study and what would be occurring over the next few months. The usable consents were faxed to the appropriate providers requesting all immunization records be sent to the Health District. The first requests for immunizations were sent out on November 4, 1999 (see Appendix I). A telephone call was placed to each provider prior to the request being faxed. During this call, the correct contact person was identified for addressing the fax and the fax number was verified. When a request was being made for more than one participant, a table was generated which gave the provider a consolidated list of parent names, parent identifying numbers, child names and dates of birth. This table was also used to track the consent forms to ensure all forms were sent and received. Ninety-six percent (n = 157) of the 159 usable consent forms had all of the provider confirmations returned.

Questionnaire Results

The questionnaire used in the 1999 Spokane County Birth Certificate Follow-Back Survey (BCFBS) was adapted from questionnaires used by other Washington State counties. The Spokane Regional Health District Assessment/Epidemiology section is equipped with

the ability to scan data from questionnaires using a software program called Teleform (See Appendix K). The questionnaire was keyed into Teleform and then linked with a database in the software program, Statistical Package for the Social Sciences (SPSS). The use of Teleform considerably reduced the amount of time generally required for data entry. Each survey was scanned, verified and checked for errors.

The percentage of responses to the questions in each section of the questionnaire are reported over the next few pages. Further analysis using statistical manipulation is reported in a subsequent chapter; *Immunization Coverage of Participant Sample Children*.

Section I. Child Information

In most cases, the questionnaire was completed by the mother of the sample child (93%). The other questionnaires were completed by thirteen fathers and two grandmothers. Only one of the respondents indicated he was not the primary caregiver, but was the father of the child. This family was of Asian descent and felt most comfortable with the father interacting with the interviewer. (Q09;Q10)

The surveyed sample children in the Spokane County BCFBS were 53.2% male and 46.8% female. Most of the sample children did have at least one older sibling (55.8%), but did not have a younger sibling (75.7%). The chart below shows the ratio of younger and older siblings for the surveyed sample. (Q02;Q04;Q05)

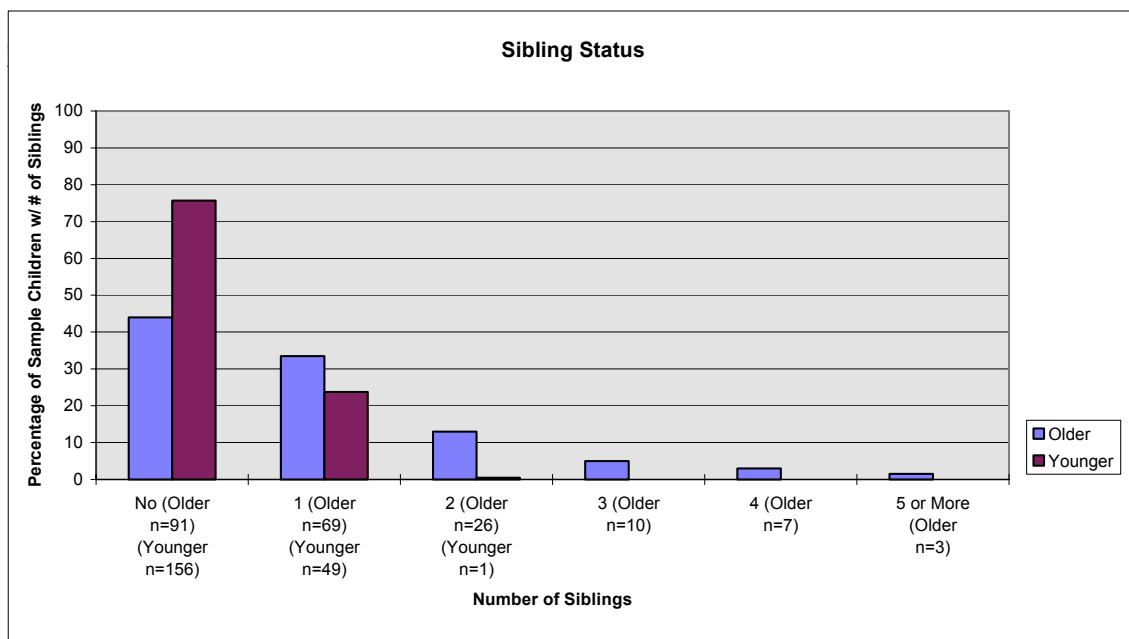


Figure 3: Sibling Status

The results of Spokane County’s BCFBS indicate a stable lifestyle that is not interrupted by frequent moves in residence for most of the polled sample children. Ninety-four percent of the respondents currently live in Washington State. Only 12 of the respondents had moved out of state. Likewise, 91% of the respondents still live in Spokane County, with only six caregivers reporting they lived outside of Spokane County, while remaining in Washington. Over half of the surveyed sample (51%) had never moved since birth. One quarter of the sample (24.4%) had only moved once. One respondent reported owning and moving between three households throughout the year and stated their child had moved 20 times since birth. One individual chose not to answer this question. The chart

below shows the percentage of reported moves by the respondents since the birth of the child. (Q06;Q07;Q08)

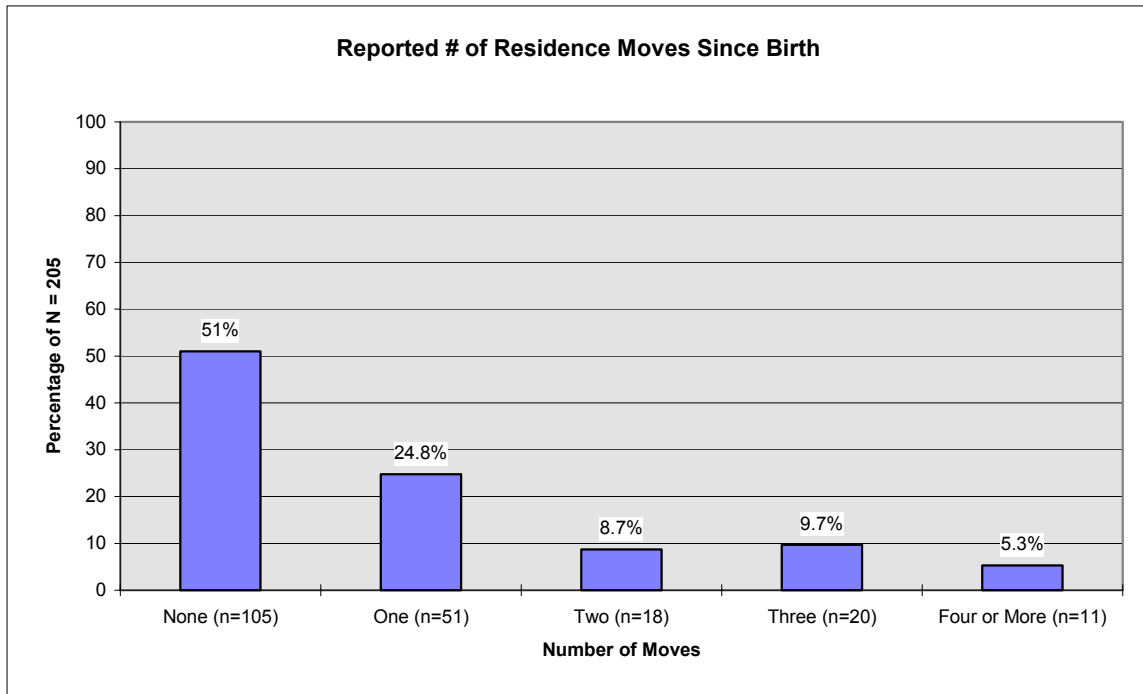


Figure 4: Reported # of Residence Moves Since Birth

When asked to identify the individuals who usually took the sample child for immunizations, the mother of the child was indicated in 95% of the cases. In 18% of the cases the father of the child also took the child for immunizations. In three cases the grandparents usually took the child for immunizations. (Q11)

Section II. Health Care and Immunizations

The majority of the sample children (92%) did have a primary care physician chosen for them prior to birth. An even higher percentage (96%) currently have a regular health care provider. Most of the respondents (94%) reported taking their children to a private provider for their medical care, 5% reported taking their child to a military facility for their medical care, and 1% reported taking their child to a community health clinic for medical care. (Q12;Q13;Q14)

The results of Spokane County's BCFBS indicate the majority of sample children did have insurance coverage during the first year-and-a-half of life. Of the total participants surveyed only one indicated their child did not have any type of insurance coverage. The participants were asked to identify all types of insurance coverage applicable for their child. The chart below shows the distribution of insurance coverage for the sample surveyed. (Q15)

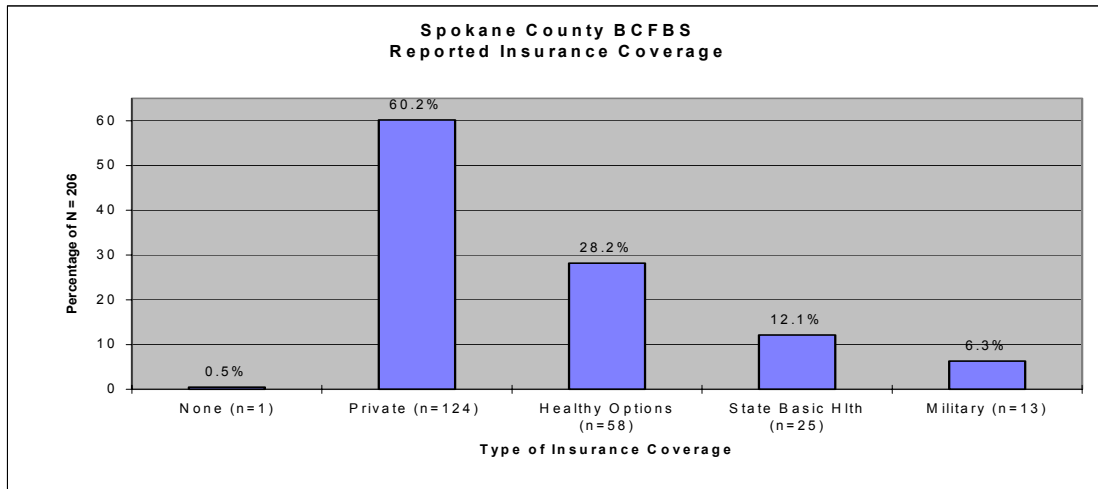


Figure 5: Reported Insurance Coverage

Out of the 206 respondents, only two said the sample child had not received immunizations. The majority of children reported as receiving immunizations, received the immunizations at a private provider's office (94%). Most of the caregivers surveyed (91%) indicated they had been given an immunization record from the provider. The chart below shows the distribution of locations where sample children were taken for their immunizations. (Q16;Q17;Q18)

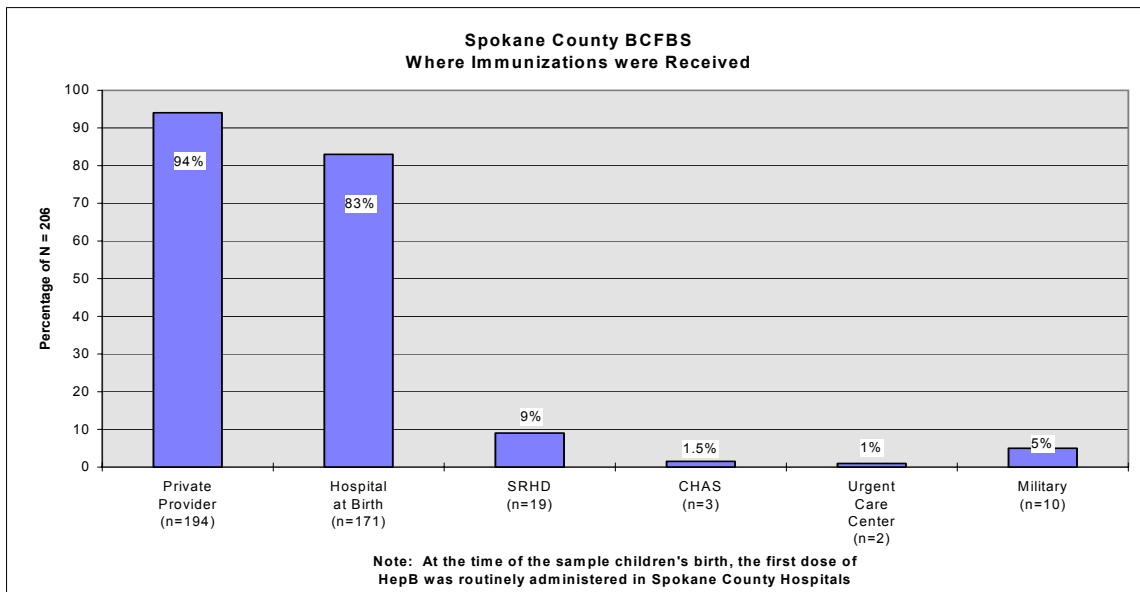


Figure 6: Where Immunizations Were Received

Section III. Dates Immunizations Were Received

These results are reported in *Immunization Coverage of Participant Sample*.

Section IV. Immunization Experiences

Awareness

Not all of Spokane County's primary caregivers reported being informed regarding when their child should be taken for his or her immunizations. Ninety-three percent of the respondents stated they knew when it was time for their child to be immunized. Over three-quarters of the respondents (76%) kept an immunization schedule in their home. Many of the respondents indicated the schedule was a magnet on their refrigerator. The majority of respondents did not receive Child Profile materials; only 21% of the respondents indicated they did receive these materials. (Child Profile did not begin marketing in the Spokane area until July of 1998 and would have missed these children.) The number of primary caregivers who had received a reminder to keep an immunization appointment was divided almost evenly with those who indicated they had not received a reminder, 47% and 53% respectively. (Q28;Q29;Q30;Q31)

Barriers

A very small number of respondents indicated they had experienced difficulty scheduling an appointment to get their child immunized. Likewise, very few respondents indicated they had difficulty getting their child immunized due to clinic hours, transportation problems, or because of the cost of immunizations. The following chart breaks down the frequency of respondents reporting difficulties in these areas. (Q32;Q33;Q34;Q37)

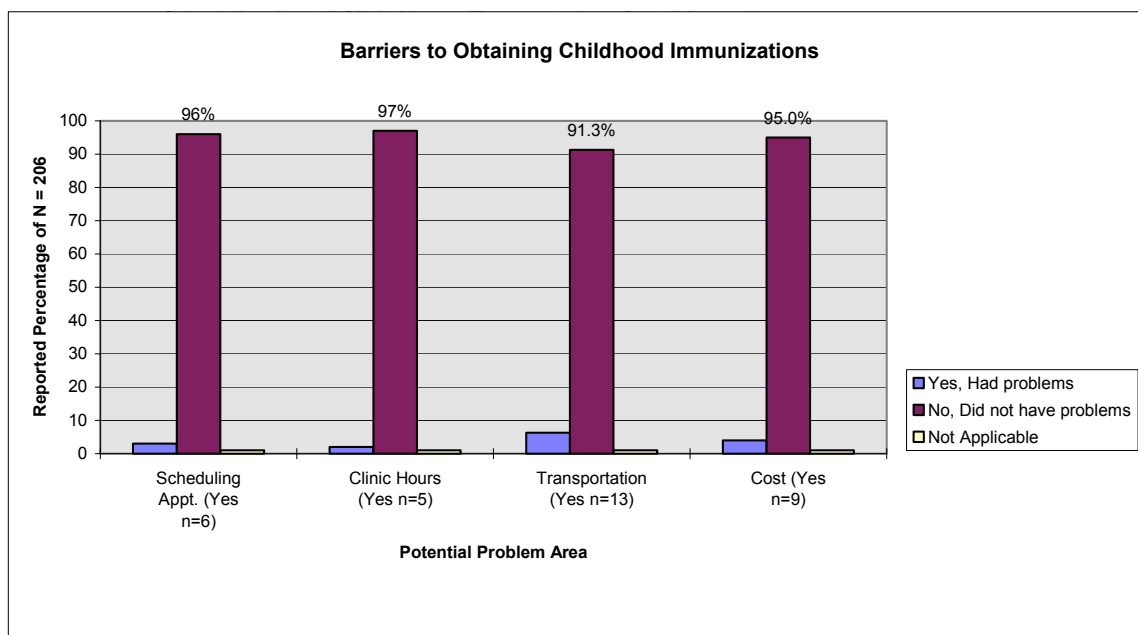


Figure 7: Barriers to Obtaining Childhood Immunizations

Work Issues

The majority of respondents indicated that they or someone else did not have to take time off from work to get the sample child immunized (62%). Of the 36% that indicated they did have to take time off from work, 7% also said they had difficulty getting time off from work. (Q35;Q36)

Missed Opportunities

Missed opportunities to immunize children does not seem to be a prevalent problem in Spokane County. Twenty-two percent of the respondents said their child had not received an immunization when an immunization had been expected. The most frequently given reason was because the sample child had been too ill to receive the immunization. Only 2% said the reason for not receiving the immunization was because it was too soon for another shot. One respondent stated the nurse had told her there was not enough time during the visit to give the immunization, another respondent said the nurse had forgotten to give the shot, and a third respondent said their child had not been immunized due to confusion about dates. Less than 5% of respondents indicated they had been sent elsewhere to receive immunizations. (Q40;Q41;Q38)

The majority of the respondents (83%) indicated that a primary care physician had recommended giving their child immunizations. Fourteen percent of the respondents indicated they had to request immunizations be given to their child. (Q42)

Other Problems

When asked about other problems receiving immunizations, two respondents said they did have other problems getting their child immunized. Specifically, one respondent said, "There is too little information surrounding the immunization process." The respondent felt the use of words like, "mild," "moderate," and, "severe," in the paperwork discussing possible reactions was ambiguous. This respondent felt the use of these words needed clarification. The second respondent said she had problems because of her own personal health. (Q43)

Personal, Philosophical or Religious Objections

Eighteen respondents indicated they had personal, philosophical or religious reasons for why some immunizations should not be given to their child. The most frequently occurring vaccine mentioned was the varicella vaccine. The five individuals who identified varicella as problematic stated the vaccine was too new and controversial and felt the risk of giving it did not outweigh the benefit. Two individuals identified the hepatitis B vaccine as problematic. One respondent worked in a nursery and had heard horror stories regarding the hep B and another respondent felt hep B was too controversial. This individual believed the natural immunities a child gains from breast feeding was a better source of protection. One respondent felt the oral polio vaccine was scary. The remainder of the respondents who indicated they had personal, philosophical, or religious reasons against immunizations gave reasons that reflected negative media coverage of immunizations and fears of disease being caused by immunizations. (Q44)

Child care

The last five questions in section IV addressed child care issues and socio-economic conditions. Almost 70% of the respondents indicated the sample child had not attended child care regularly during their first year-and-a-half of life. Only one of the sample children had been excluded from child care due to lack of immunizations. (Q45; Q46)

WIC and AFDC/TANF

Fifty-one percent of the respondents said the sample child had received commodities through the WIC (Women, Infants, and Children) program. A considerably lower percentage, 21.5%, stated the sample child had been enrolled in the AFDC (Aid to Families

with Dependent Children) program or the Temporary Aid to Needy Families (TANF) program during this time frame. (Q47;Q48)

Number of Visits to Health Care Provider

The number of times the sample child saw a health care provider during their second year of life ranged from zero to five or more times, with five or more times being the most frequently stated number. The table below shows the distribution of times seen by a health care provider during the second year of life. (Q49)

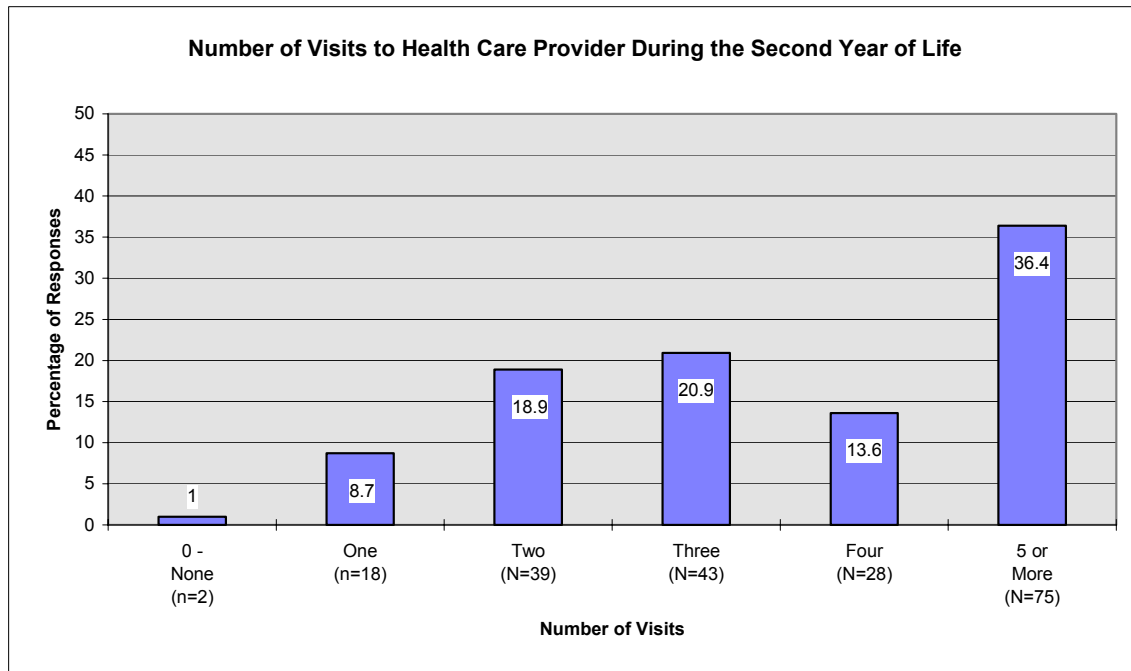


Figure 8: Number of Visits to Health Care Provider During the Second Year of Life

Section V. Demographic Information

The typical profile of a respondent in the Spokane County BCFBS indicates the primary caregiver of the sample child was a 31 year old Caucasian woman, who had taken some college courses, was married and was not employed. The household income during the first year of the sample child's life was less than \$30,000 for a household of 4.22 persons.

Age of Respondents

The age of the respondents ranged from 19 to 60 years. The mean age was 31.2 years, with the most frequently occurring age being 29 years. The mean age of mothers for the entire sample frame (cohort) was 29.4 years, with the most frequently occurring age being 30 years. This indicates the age of respondents for the random sample in the Spokane County BCFBS is representative of the sample frame. The chart below shows the distribution of ages for the respondents. (Q50)

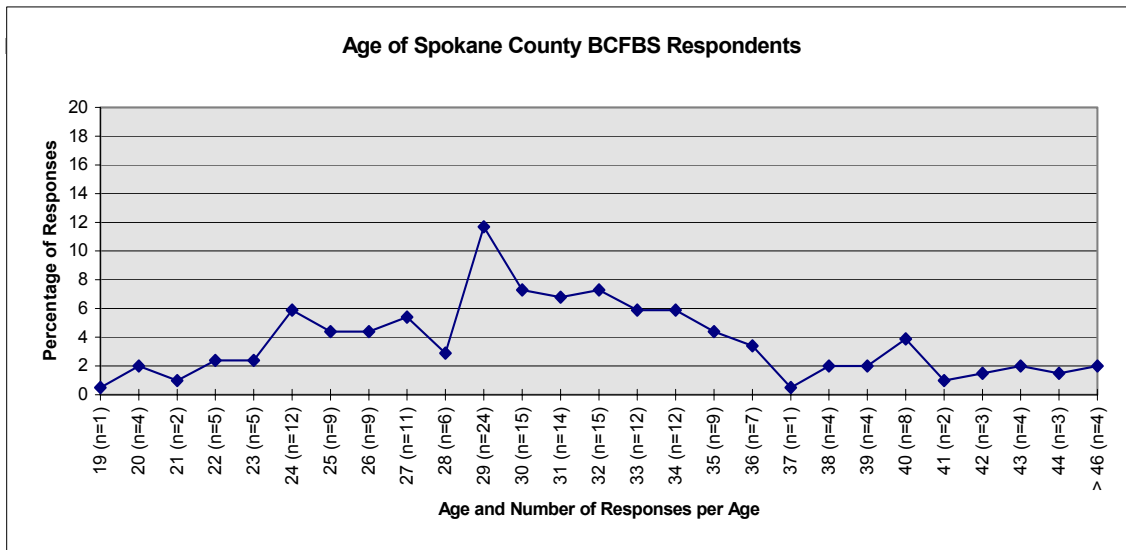


Figure 9: Age of Survey Respondents

Educational Level of Respondents

The majority of the respondents in Spokane County’s BCFBS had at least a high school education. Thirty-three percent of the respondents had taken some college classes. The chart below shows the distribution of education completed by the respondents. (Q51)

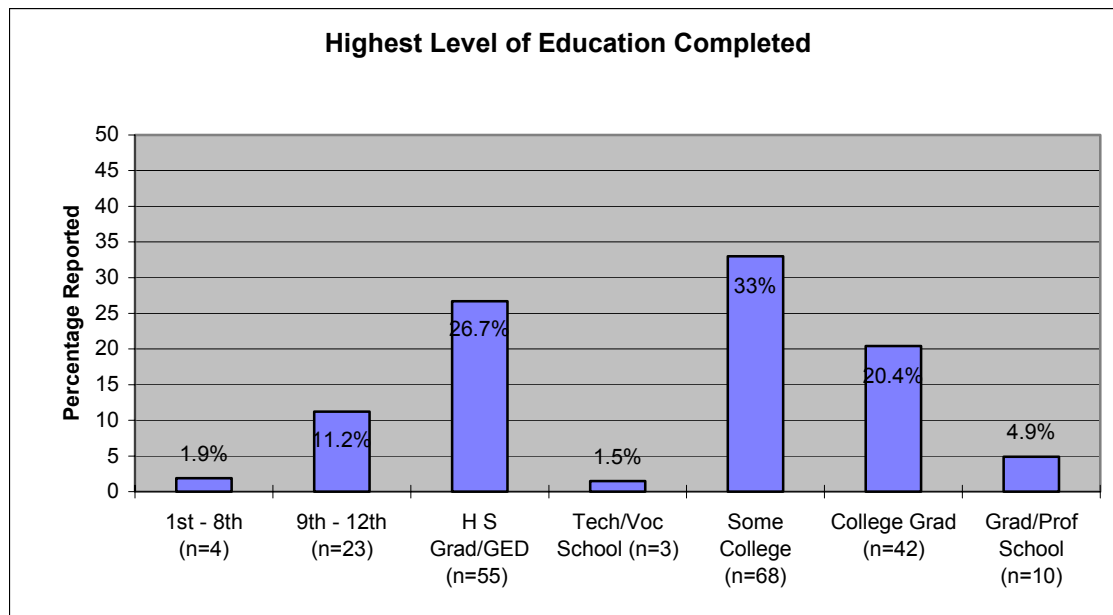


Figure 10: Highest Level of Education Completed

Marital Status of Respondents

The majority of the respondents indicated they were currently married (71.8%). Fourteen percent (n = 29) of the respondents indicated they were single and had never been married. The chart below shows the distribution of marital status for the respondents in this survey. (Q52)

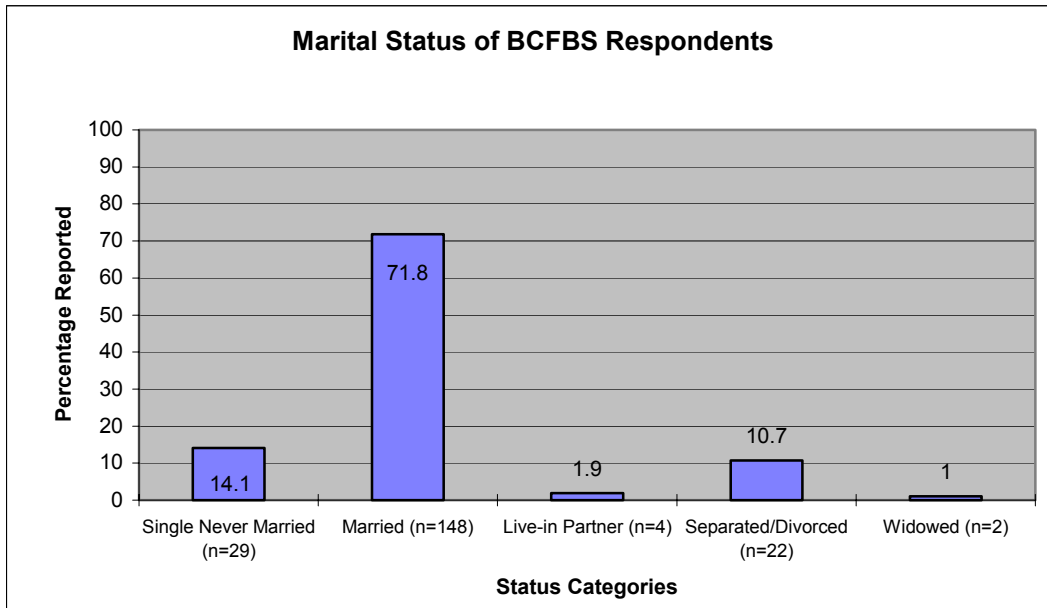


Figure 11: Marital Status of Respondents

Employment Status of Respondents

The majority of the respondents were either unemployed or were employed part-time during the sample child's first year-and-a-half of life. Only 30% of the respondents indicated they had worked full time at some point during this time frame. The chart below shows the distribution of employment status. (Q53)

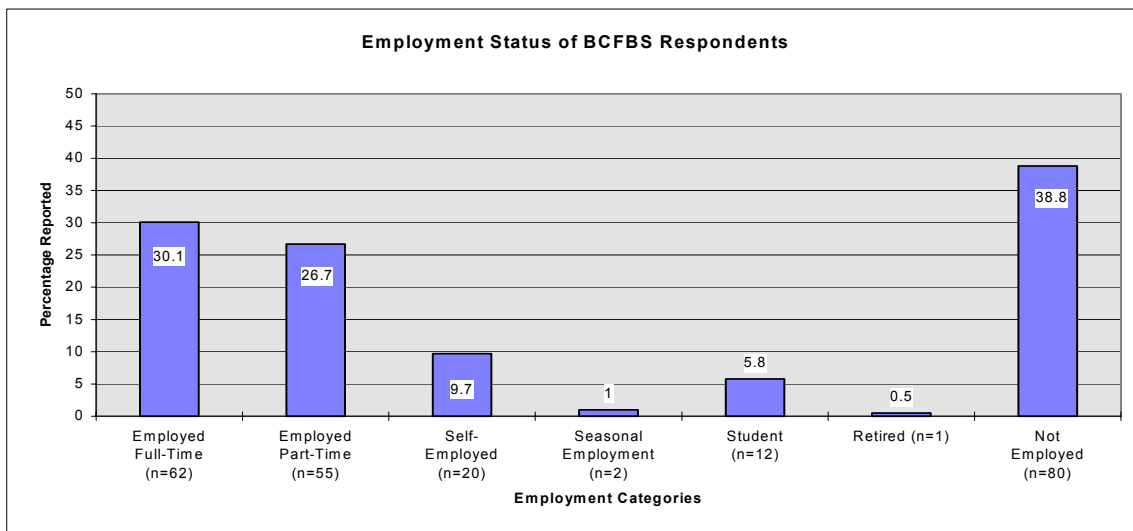


Figure 12: Employment Status of Respondents

Ethnicity and Race

Ethnicity and race were identified in this survey with the same parameters being used in the 2000 census. This format allows respondents to identify whether or not they were of Hispanic descent and to specify the descent if they chose to. Of the 206 respondents, 11 indicated they were of Hispanic descent. Seven were of Mexican, Mexican American or

Chicano descent and of the four who stated they were of other Hispanic descent only one chose to specify Salvadorian.

The three groups with the highest representation in the Spokane County BCFBS were Caucasian (n = 180), African American (n = 4) and Native American (n = 4). Other races represented in the data are: Filipino (n = 2), Asian Indian (n = 1), Japanese (n = 1), Korean (n = 1), Vietnamese (n = 1), Hmong (n = 1), Other Pacific Islander (n = 1), German (n = 1), West Indian Jamaican (n = 1), and refused (n = 1). (Q54;Q55)

English was reported as the primary language spoken in 199 of the respondent homes. The other respondents reported the primary language spoken in their homes as Spanish (n = 2), Vietnamese (n = 1), Hmong (n = 1), Russian (n = 1), and Lakota (n = 1). (Q56)

Number of Persons in the Household

The number of persons living in the household of the sample child ranged from 2 to 11. The mean number of persons living in the household was 4.22 with 33% of the sample children living in a household with four people. Sixty-seven percent of the respondent families reported four or more persons living in the household. The chart below shows the distribution of household size. (Q57)

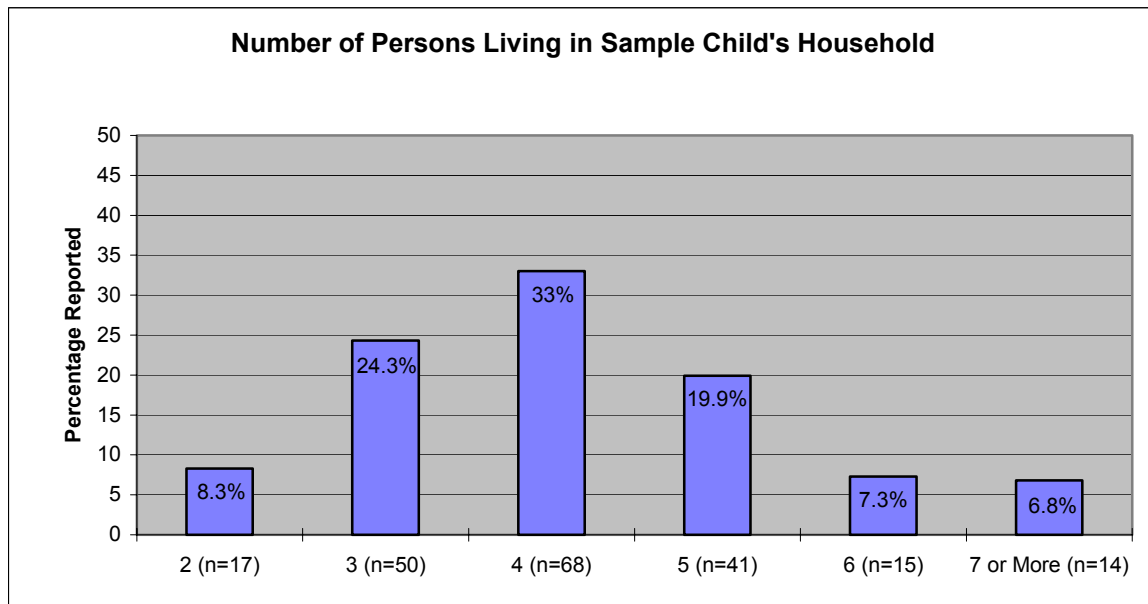


Figure 13: Number of Persons Living in Child's Household

Income

Fifty-nine percent of the participants indicated the household income during the sample child's first year of life was \$34,999 or less. Sixteen percent of the respondents indicated their income was less than \$10,000 during this time. At the time of this writing a family of four met 200% of poverty guidelines with a household income of \$33,400 per year. The chart below shows the income distribution of respondents for the Spokane County BCFBS during the child's first year of life. (Q58)

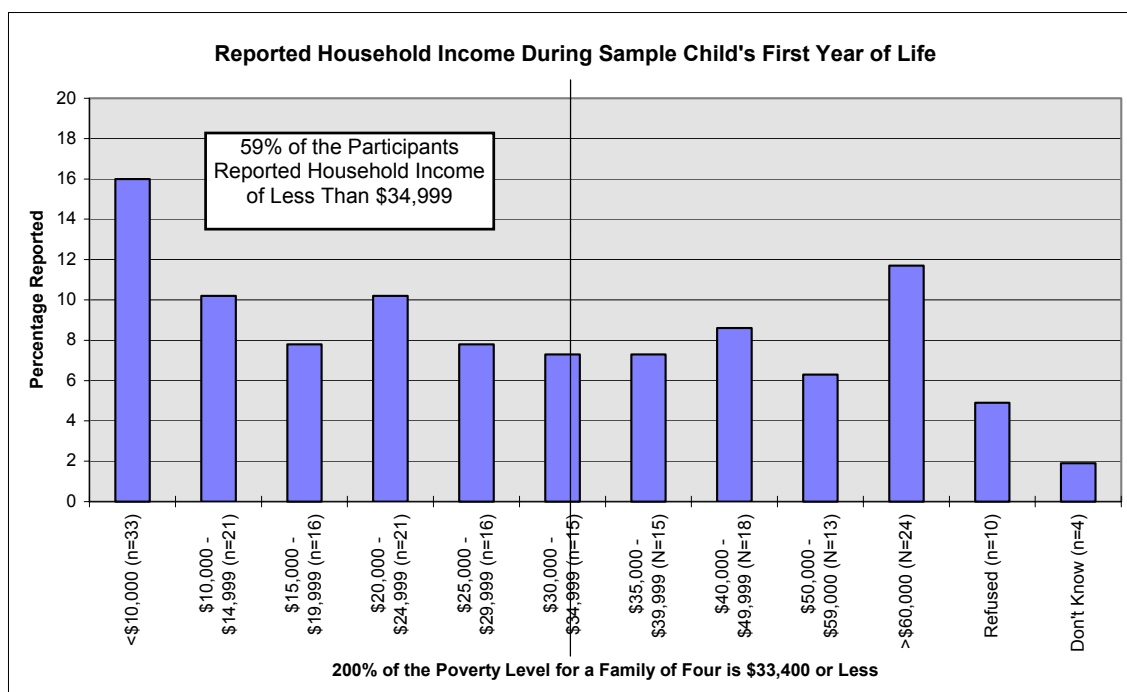


Figure 14: Household Income During Sample Child's First Year of Life

Immunization Coverage of Participant Sample Children

The immunization coverage of sample children will be examined from a number of different viewpoints. The data gathered for this study consisted of immunization information given by respondents from shot records and immunization information from the health care providers who administered the immunizations. Neither of these two sources provided information on the immunizations of 100% of the sample children surveyed. In order to capture the entire scope of the information gathered, the immunization data will be analyzed in three ways; (a) the respondent information as reported from a shot record, (b) the health care provider information, and (c) an aggregate of the two.

The immunization information will first be presented by reporting individual antigen coverage as reported by each group. Secondly, the up-to-date (UTD) status of immunizations will be reported in three categories of UTD for each of the above three groups. The categories will be: (a) 4:3:1, or 4 Diphtheria/Tetanus/Pertussis (DTP), 3 Polio, and 1 Measles/Mumps/Rubella (MMR); (b) 4:3:1:3, or the previous three plus 3 Hepatitis B; and, (c) 4:3:1:3:4, or the previous four plus 4 Haemophilus Influenza Type b (Hib). If a child is missing even one shot in any category they will be given the status of Not UTD. Children for whom no immunization information is available will be given the status Cannot be Determined.

Finally, the UTD status will be paired with questionnaire responses in order to identify pockets of need. These additional areas will look at 4:3:1 UTD status in relation to: (a) age of respondent, (b) marital status of respondent, (c) educational level of respondent, (d) employment status of respondent during first year of sample child's life, (e) number of persons living in the household, (f) number of siblings, (g) multiple residence moves, (h) household income during first year of sample child's life, (i) WIC or AFDC recipient, (j) insurance coverage, (k) multiple providers, (l) Spokane County Zip codes, (m) number of

visits to health care provider in second year of life, and (n) barriers to obtaining immunizations.

Household Individual Antigen Information

A total of 123 participants provided immunization information during the interview process. Respondents were asked to retrieve the sample child’s immunization record and were then asked to read the dates of administration from the record. Respondents who did not have access to the child’s shot record were not asked for immunization information. The chart below shows the reported percentage of the 123 responses, broken down by individual antigen given to the sample child.

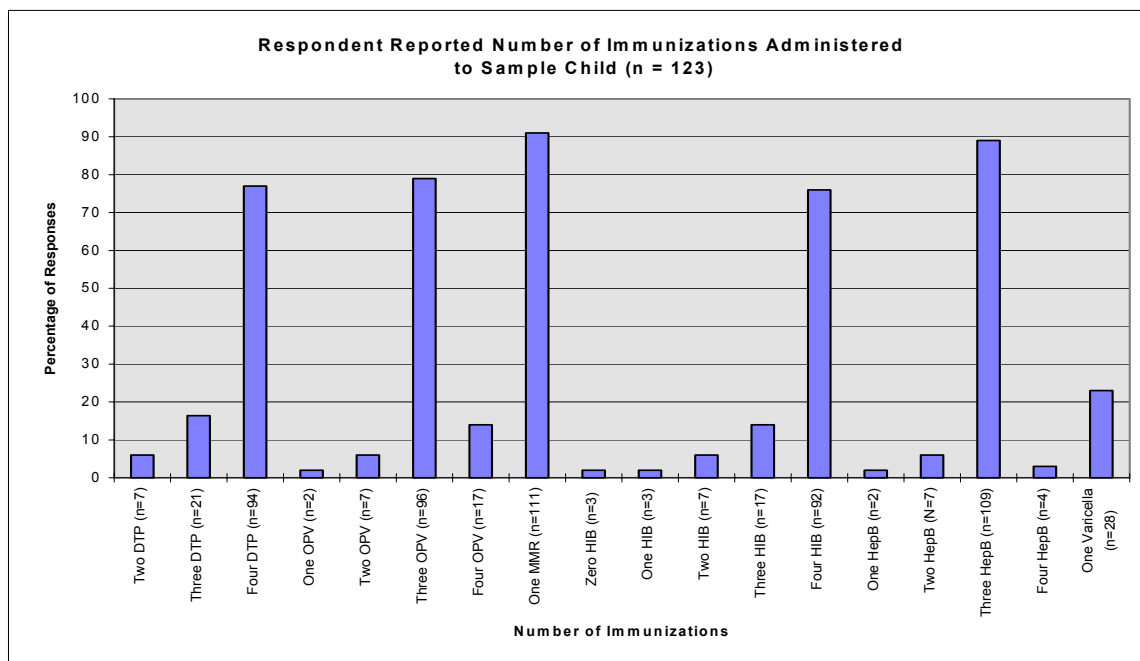


Figure 15: Number of Immunizations Administered to Child

Household Reported UTD Status

In order to look at the three categories of UTD status, a variable was created by looking at the entire set of immunization information for each child. If a sample child had information for any immunizations in a category, but not all, they were given the Not UTD status for that category. For example, the respondent for one sample child gave the interviewer information on one hepatitis B immunization. This child is included in all three of the respondent Not UTD categories.

Ninety-two of the sample children were reported as 4:3:1 UTD by the respondents. Thirty-one of the sample children were given Not UTD status for the 4:3:1 category. The remainder of the respondents did not provide immunization information and were given the classification Cannot be Determined (n=83). The chart below shows the three UTD categories as reported by the respondents.

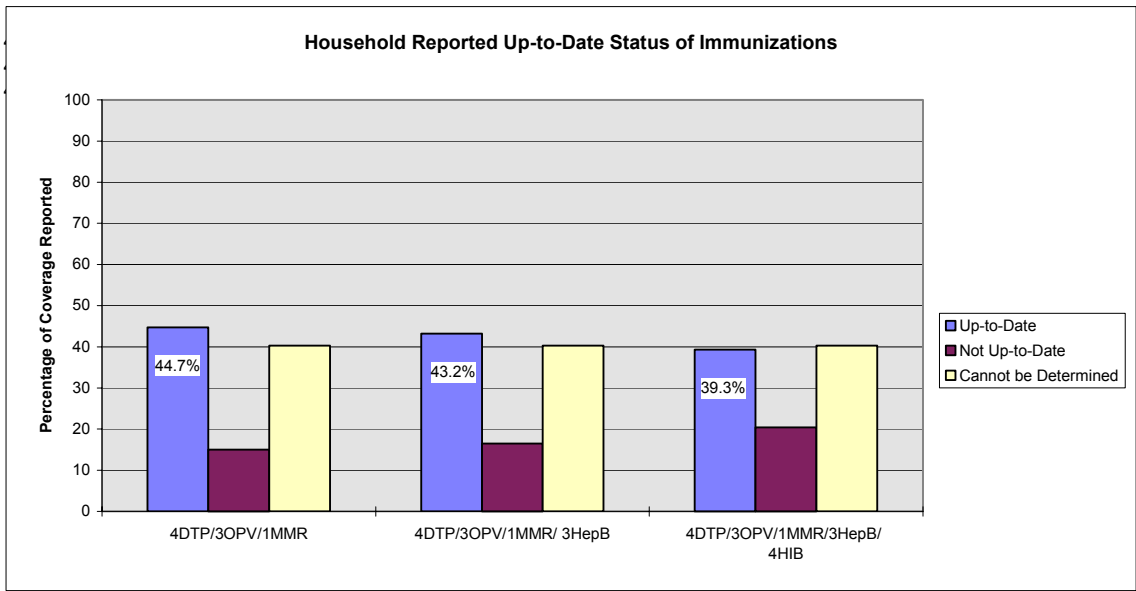


Figure 16: Household Reported UTD Status of Immunizations

Provider Individual Antigen Information

Of the 160 signed Consents for Release of Medical Records returned to the SRHD by participants, 158 or 99% had all of the providers return immunization information. The chart below shows the percentage of responses for individual antigens given to the sample child and documented by the provider.

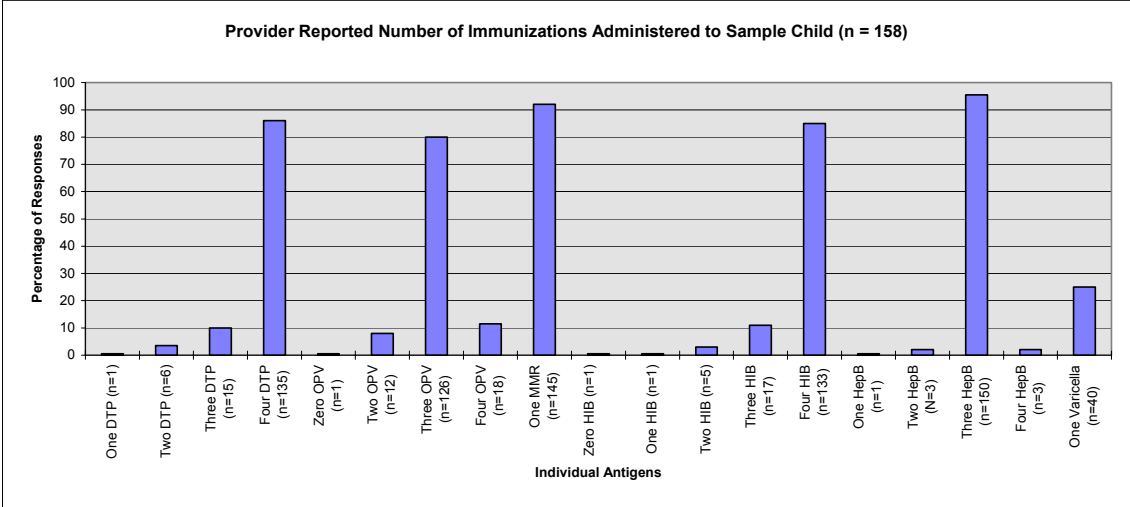


Figure 17: Provider Reported Number of Immunizations to Child

Provider Reported UTD Status

The same approach was taken with the provider information as was taken with the household information. A variable was created by looking at the number of immunizations given for each antigen. Sample children who were given some immunizations, but not the total number required to be UTD, were given the status Not UTD. One hundred and thirty-four (n = 134) of the sample children were reported as 4:3:1 and 4:3:1:3 UTD by the providers. Twenty-three sample children were given the Not UTD status in these categories.

Sample children for whom no provider verification was received were given the status Cannot be Determined (n = 49). The chart below shows the percentage for each of the UTD categories as reported by the providers.

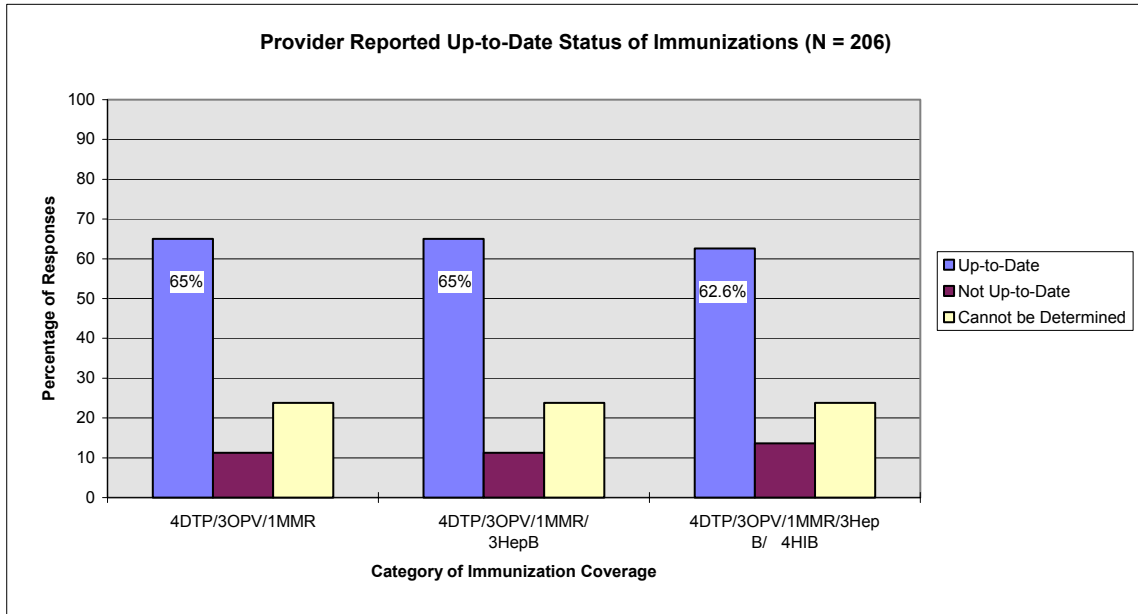


Figure 18: Provider Reported UTD Status of Immunizations

Provider and Household Combined Individual Antigen Information

The original provider database was copied to a new worksheet and any household immunization record that was not present in the provider database was added to this new database. This increased the total number of cases with immunization information to 175 or 85% of the respondents and 70% of the sample. The chart below shows the percentage of individual antigens given to the sample children for whom immunization information was available (n = 175).

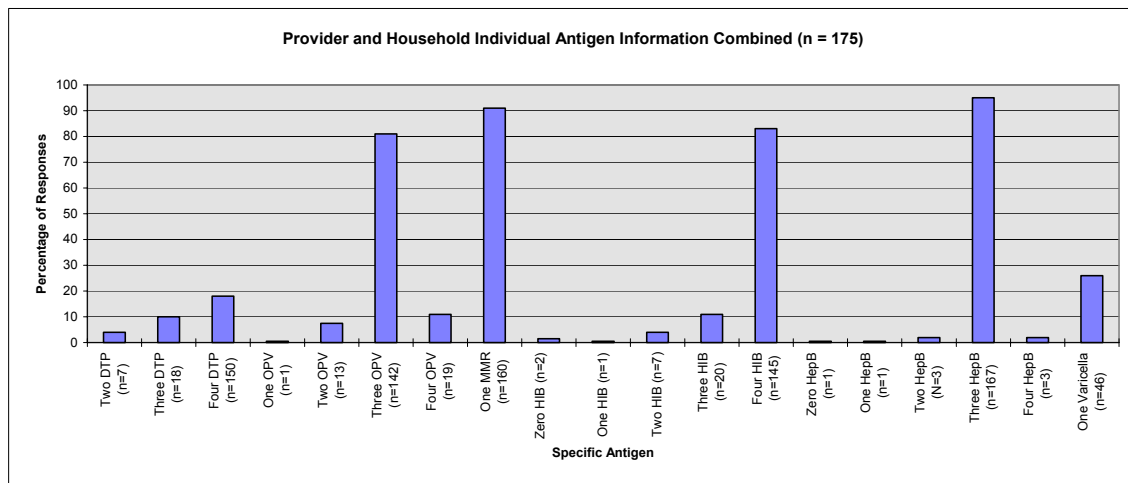


Figure 19: Provider and Household Individual Antigen Information Combined

Provider and Household Combined UTD Immunization Status

Provider and household UTD status was determined in the same manner as previously outlined. Of the 175 sample children for whom immunization information was available, 148 were 4:3:1 UTD or 71.8% of the total participant sample of 206. Twenty-seven sample children were 4:3:1 Not UTD and there was a total of 31 for whom there was no immunization information. The chart below shows the UTD status of the sample children from combined immunization information.

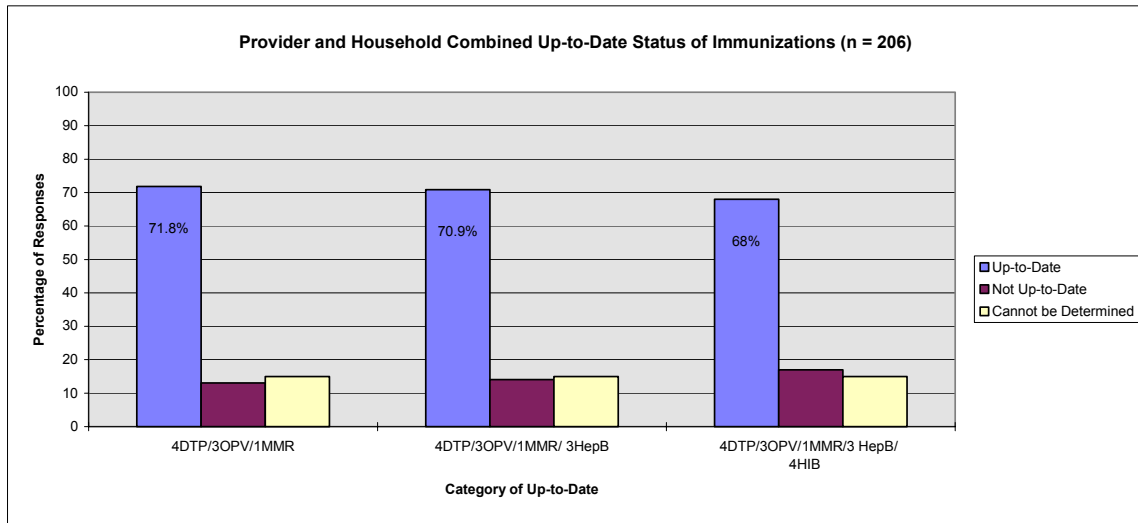


Figure 20: Provider and Household Combined UTD Status of Immunizations

Age of Respondent and UTD Status

Age of a child’s primary caregiver has been identified as a possible contributing factor for pre-school children being under immunized. The mean age of all respondents in Spokane County’s BCFBS was 31.2 years old. When comparing groups UTD and Not UTD there was not a significant difference between groups in the mean age of the respondent ($F = .363, p = .547$).

Marital Status and UTD Status

The majority of the respondents (72%) reported being married. Of the 148 married respondents, 76% of their children were 4:3:1 UTD. The two other categories of marital status that had more than a handful of respondents were single, never married ($n = 29$) and separated/divorced ($n = 22$). The single, never married respondents had 62% of their children 4:3:1 UTD, while the separated/divorced respondents had 68% of their children 4:3:1 UTD.

The graph below illustrates the immunization status of the sample children by the respondents marital status.

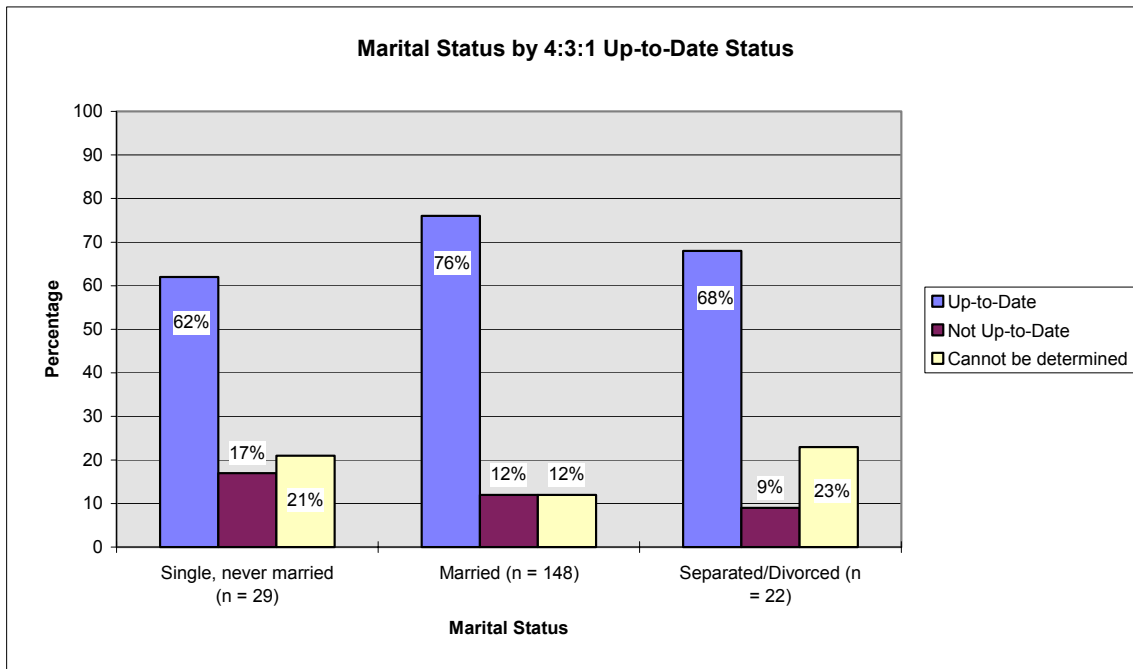


Figure 21: Marital Status by 4:3:1 UTD Status

Educational Level of Respondent and UTD Status

Most of the respondents in Spokane County’s BCFBS had a high school education or greater. Previous studies have shown level of education to be related to immunization status of the child. With greater educational level coinciding with a greater likelihood of children being fully immunized. This was found to be true for this study as well. Respondents who indicated they were college graduates or had attended graduate or professional school had the greatest percentage of sample children with UTD status. The chart below shows the percentage of respondents in the five levels of education that had more than five responses and the corresponding immunization status.

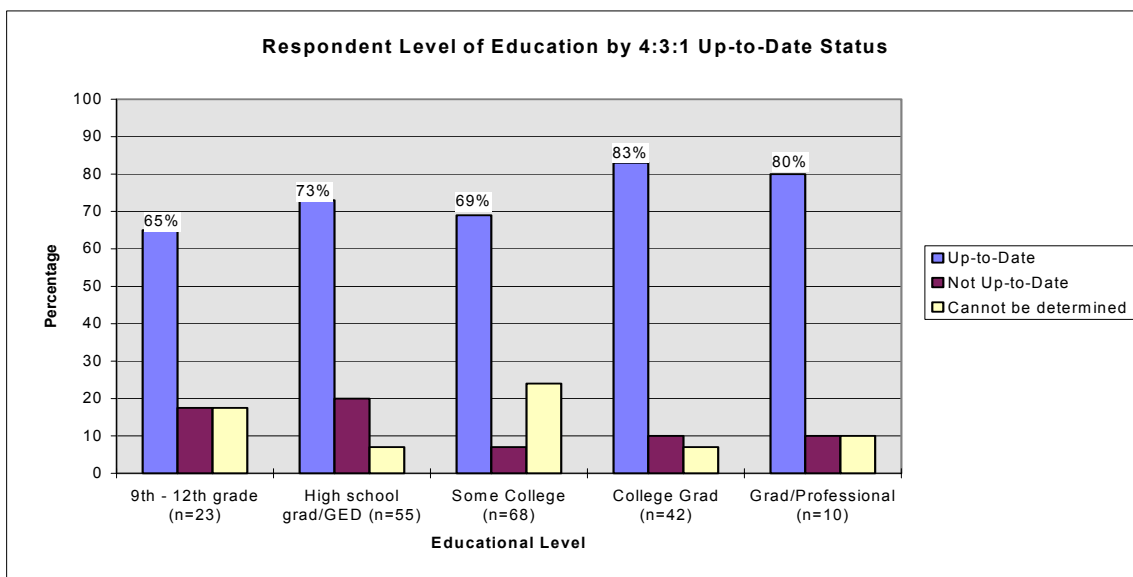


Figure 22: Respondent Level of Education by 4:3:1 UTD Status

Employment and UTD Status

Respondents were asked to indicate what their employment status was during the sample child's first year-and-a-half of life. Multiple responses could be given if the respondent had experienced more than one category during that time period. Respondents who reported having worked part-time and/or full-time during the first year-and-a-half of the child's life were most likely to have their child fully immunized. The chart below shows the percentage of responses for the five main categories of employment reported and the corresponding UTD status of the sample child.

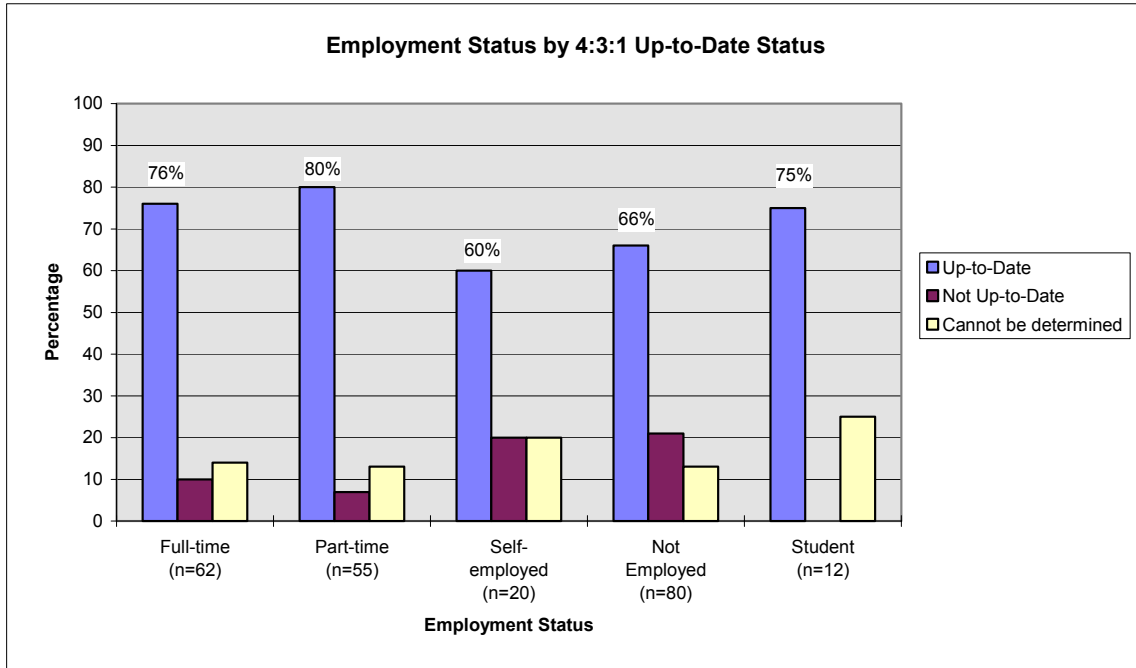


Figure 23: Employment Status by 4:3:1 UTD Status

Number of Persons Living in the Household and UTD Status

There was a significant difference in household size between sample children who were 4:3:1 UTD and those who were Not UTD. The mean household size of UTD children was 4.04 and the mean household size of Not UTD children was 4.89 ($F = 4.7, p = .03$). The chart below shows the percentage of responses for each category of household size and the corresponding 4:3:1 immunization UTD status of the sample child.

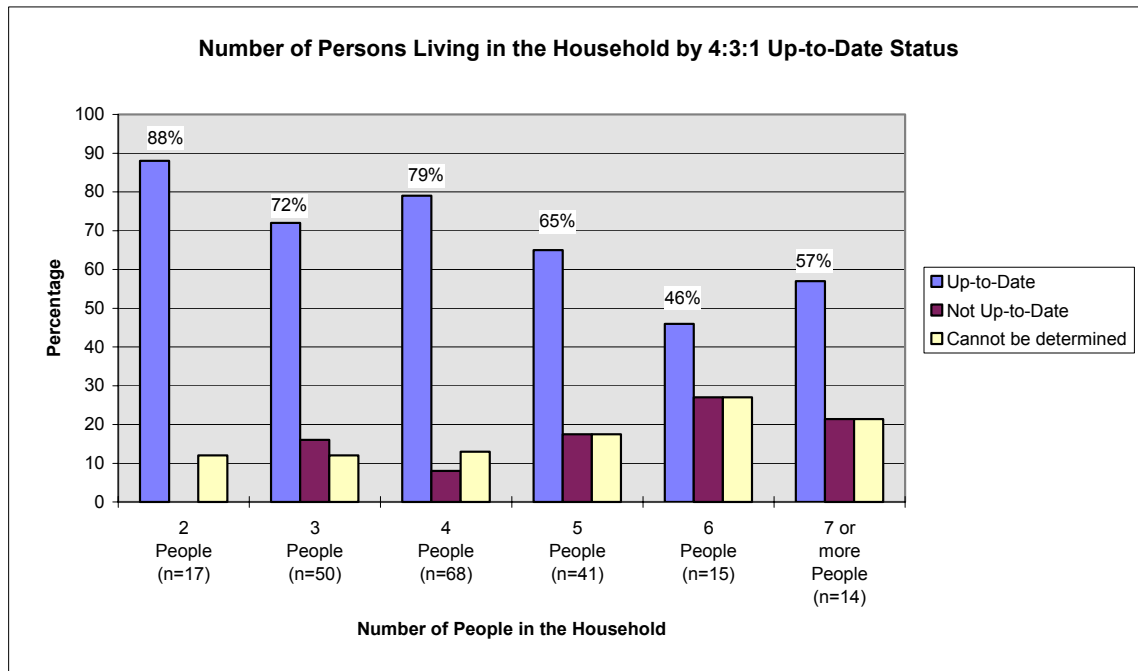


Figure 24: Number of Persons Living in Household by 4:3:1 UTD Status

Number of Siblings, Older and Younger and UTD Status

The more siblings a sample child had the less likely they were to be reported as fully 4:3:1 immunized. Sixty-three of the sample children did not have any siblings, and of these, 78% were 4:3:1 UTD. Eighty-one of the sample children had one sibling and, of these, 73% were 4:3:1 UTD. As the number of siblings increased the percentage of sample children who are fully immunized decreased. Of the 17 sample children reported as having three siblings, 59% were reported as fully immunized. The increase in number of siblings also increased the likelihood that the sample child’s immunization status could not be determined. The difference in the mean number of siblings between the UTD and Not UTD groups is significant ($F = 6.01, p = .015$). The chart below shows the percentage of sample children with the various UTD status in relation to the number of siblings they are reported to have.

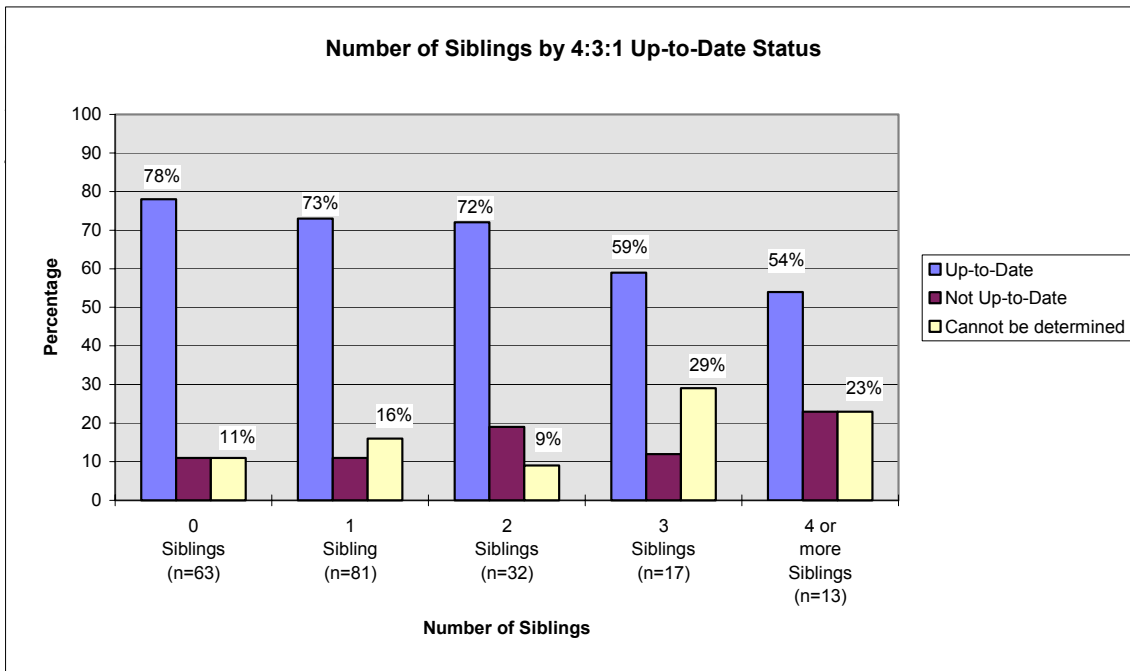


Figure 25: Number of Siblings by 4:3:1 UTD Status

Number of Residence Moves Since Birth by UTD Status

Frequent moves in residence has been previously implicated as a risk factor for children not being fully immunized. Over 50% of the sample children in the Spokane County BCFBS had never moved since birth. Another 25% of the sample children had only moved once since birth. The results of this study indicate the sample children who moved once were more likely to be fully immunized (78%) than those sample children who had never moved (73%). With 2 to 4 moves the likelihood of the sample child being fully immunized decreased. Five respondents reported experiencing five or more moves and all five of these sample children were 4:3:1 UTD. The chart below shows the percentage of respondents with number of residence moves and the corresponding UTD status.

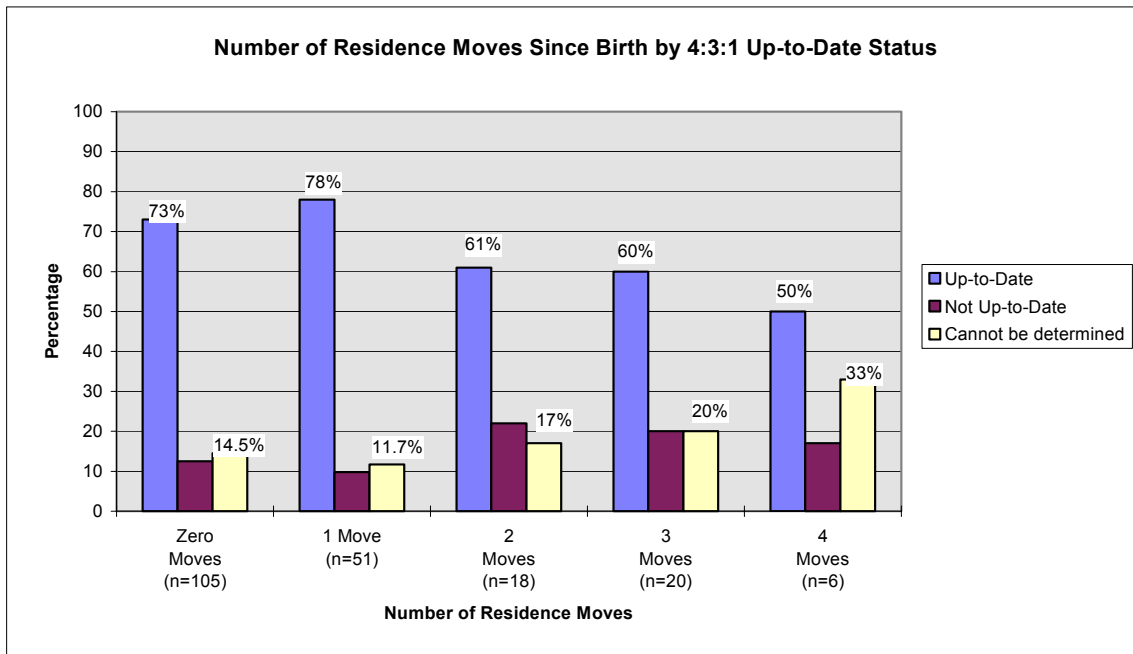


Figure 26: Number of Residence Moves Since Birth by 4:3:1 UTD Status

Household Income During First Year of Life by UTD Status

The chart below shows the percentage of sample children who were 4:3:1 UTD within each income category.

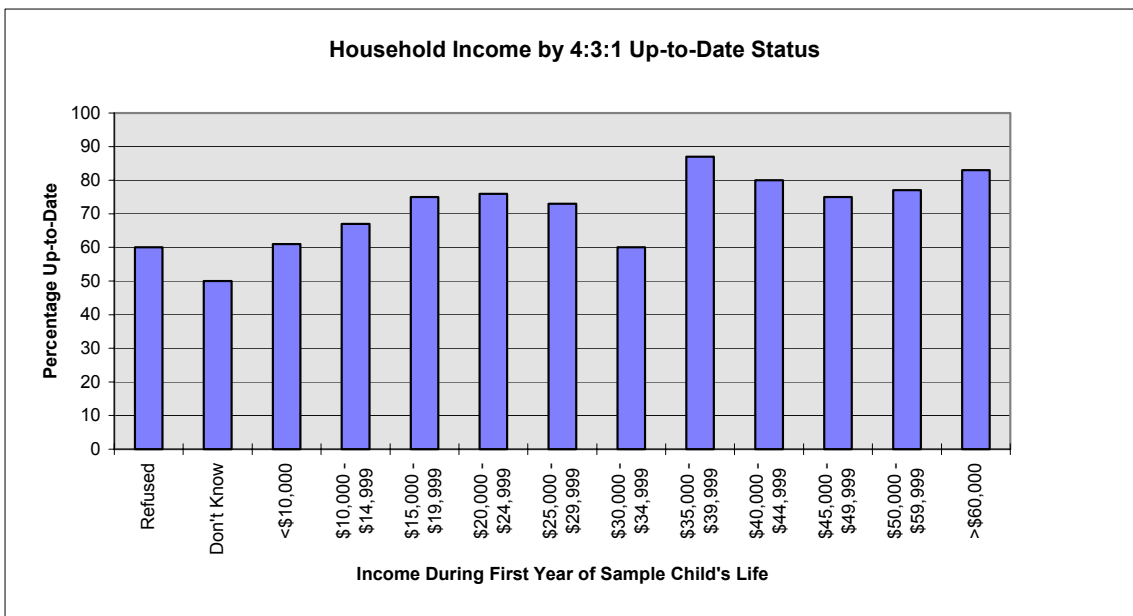


Figure 27: Household Income by 4:3:1 UTD Status

WIC or AFDC Recipient and UTD Status

The number of respondents who reported having received WIC (Women, Infants, and Children) commodities during the first year-and-a-half of the child's life (n = 106) represented 51.4% of the participants. Sixty-six percent of the sample children of respondents who reported receiving WIC were 4:3:1 UTD. Seventy-eight percent of the

sample children of respondents who reported not receiving WIC were 4:3:1 UTD. Forty-four of the respondents reported receiving AFDC (Aid to Families with Dependent Children). The sample children of respondents who reported receiving AFDC were also less likely to be 4:3:1 UTD than those who reported not receiving AFDC. The chart below shows the percentage of respondents in relation to receiving WIC commodities or AFDC and the corresponding UTD status of the sample child.

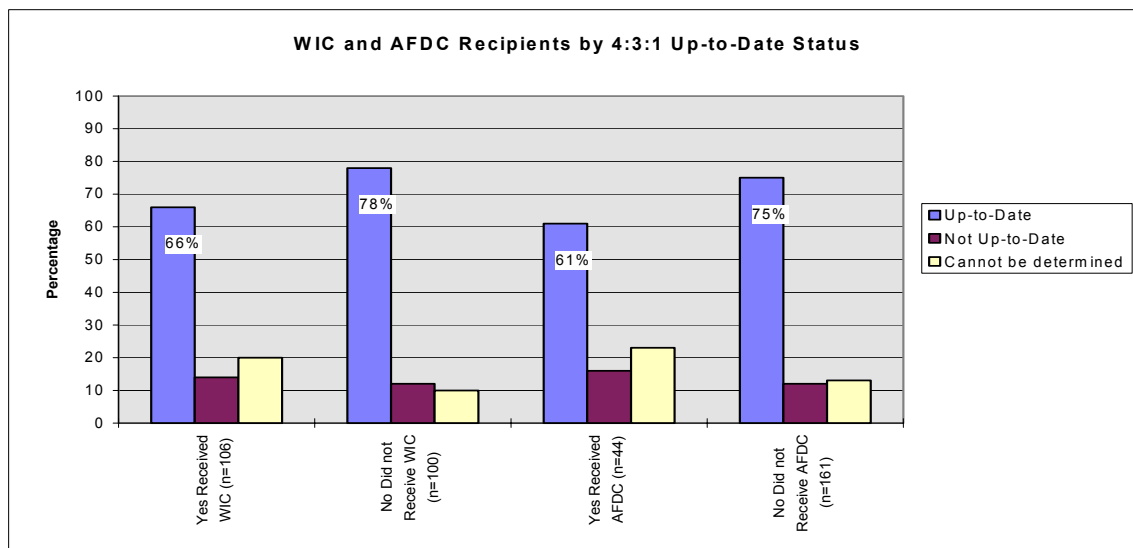


Figure 28: WIC and AFDC Recipients by 4:3:1 UTD Status

Insurance Coverage and UTD Status

As was previously indicated in this report, only one respondent reported their child did not have medical insurance. That child was not 4:3:1 UTD in his or her immunizations. Four types of medical coverage were applicable to the sample children in Spokane County’s BCFBS; they were private, medical coupon, state basic health, and military. All of these had very similar percentages of sample children 4:3:1 UTD. Ninety-four percent (n = 194) of the respondents reported the sample child received his or her medical care from a private provider. Seventy-two percent of sample children receiving immunizations from a private provider were 4:3:1 UTD. The chart below shows the distribution of UTD status with type of medical insurance coverage.

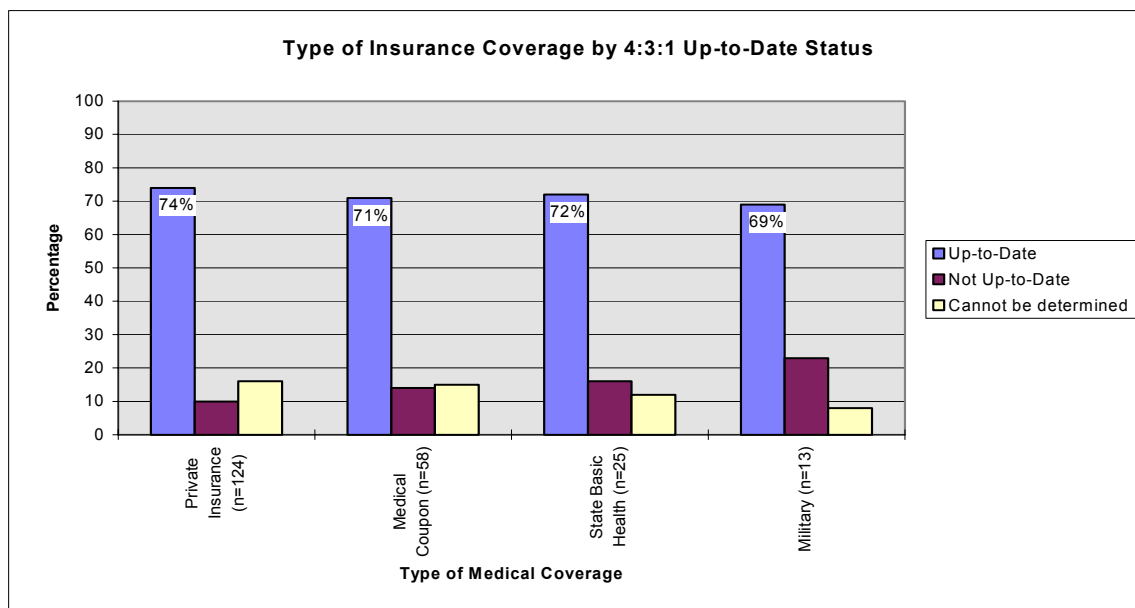


Figure 29: Type of Insurance Coverage by 4:3:1 UTD Status

Multiple Providers and UTD Status

Number of providers was determined by reviewing the consent forms for each sample child. All respondents were asked for the provider information during the interview. Eleven of the respondents did not give the interviewer information on providers. Two of these respondents gave immunization information from the shot record at the time of the interview. Three respondents indicated their child had received immunizations from three different providers. Two of these sample children were Not UTD and one was UTD. One respondent indicated their child had received immunizations from four different providers. This child was not 4:3:1 UTD. The rest of the respondents indicated their child had received immunizations from one or two providers.

At the time the sample children were born, Spokane County hospitals administered the hepatitis B immunization at birth. Hospitals were not included in the count of providers which administered immunizations.

The chart below shows the number of providers and corresponding percentage of 4:3:1 UTD status.

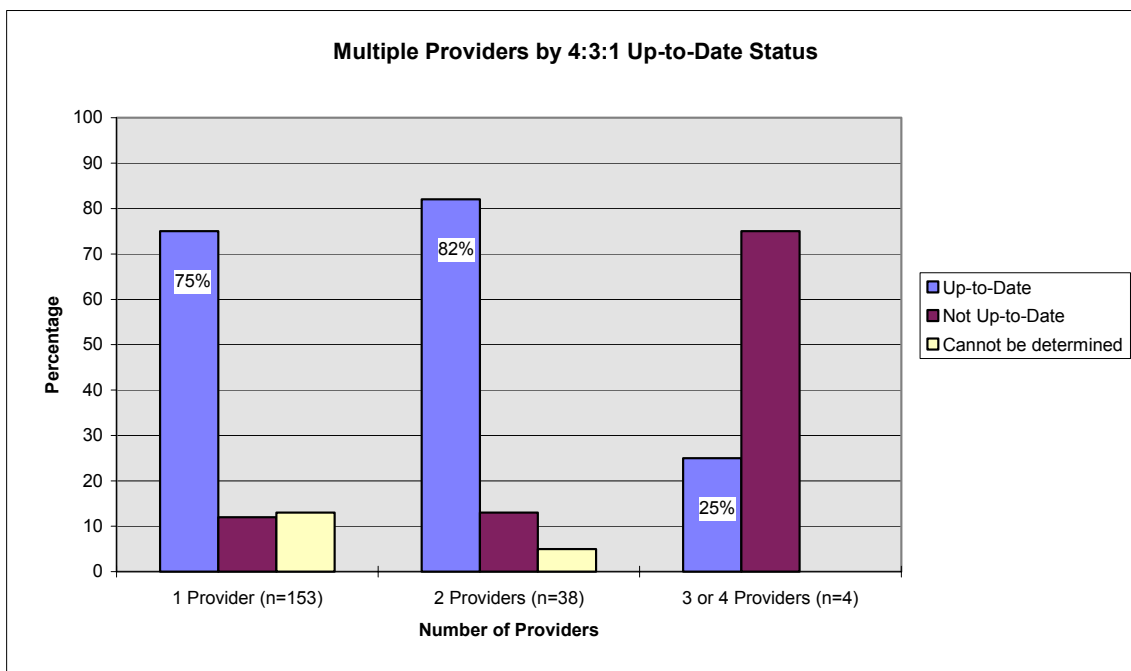


Figure 30: Multiple Providers by 4:3:1 UTD Status

ZIP Codes and UTD Status

One of the concerns for the SRHD was that certain areas of the County might have lower rates of fully immunized children than other areas. In order to explore this possibility, UTD status was cross-tabbed with corresponding Zip codes. Of the 27 sample children that were reported in the combined category as “Not UTD,” there were only two Zip codes that reflected more than two Not UTD sample children. These Zip codes were: (a) 99205, with 18 UTD sample children, 7 Not UTD and 7 Cannot be Determined, and (b) 99207, with 14 UTD children, 6 Not UTD and 4 Cannot be Determined. All of the other Zip codes had, at the most, one or two Not UTD or Cannot be Determined sample children.

Number of Visits to Health Care Provider in Second Year of Life by UTD Status

Previous studies of immunization coverage have shown children with fewer visits to a health care provider are less likely to be fully immunized. This was also seen in the responses in this study. Sample children who had reportedly gone to their health care provider once or twice in the second year of life were 67% and 56%, respectively, 4:3:1 UTD. Sample children who had reportedly seen a health care provider 4 or 5+ times were 82% and 77%, respectively, 4:3:1 UTD. The chart below shows the reported number of visits to the health care provider during the sample child’s second year of life by the corresponding UTD status for those children.

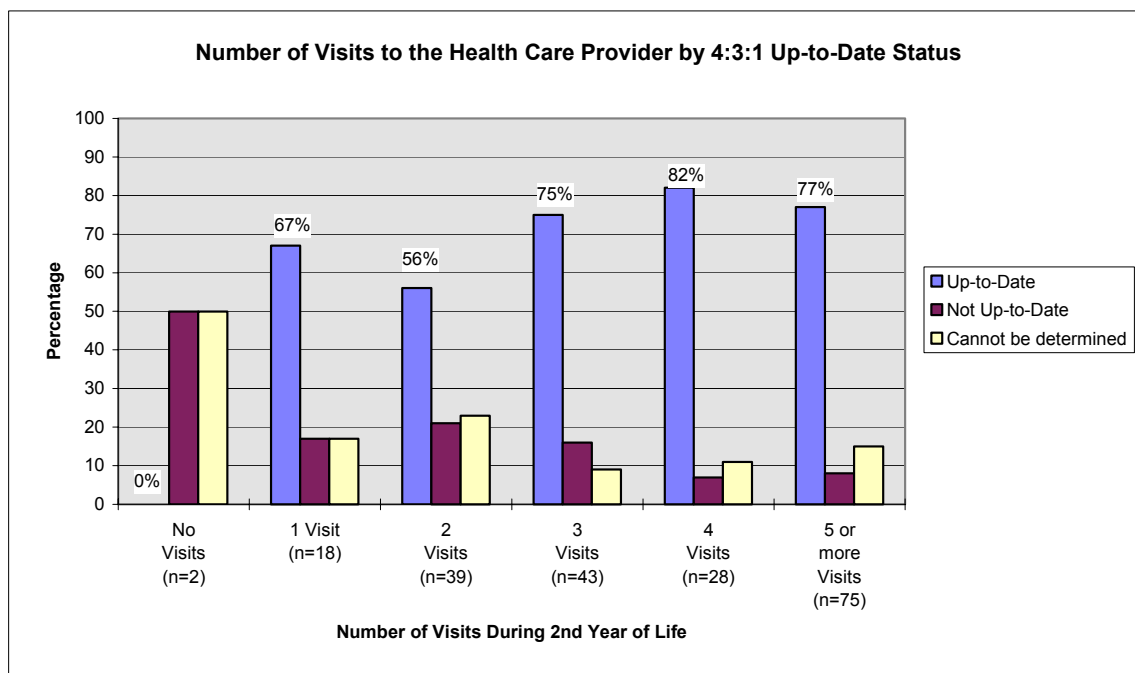


Figure 31: Number of Visits to the Health Care Provider by 4:3:1 UTD Status

Barriers to Obtaining Immunizations by UTD Status

The four barriers that were examined in this study were; (a) difficulty scheduling an appointment, (b) problems due to clinic hours, (c) problems with transportation, and (d) problems due to the cost of the vaccinations. Very few of the respondents in the Spokane County BCFBS indicated these areas were barriers to getting their child immunized.

Scheduling and Office Hours

Six respondents reported they had experienced problems with scheduling an appointment for immunizations. The children of these respondents were evenly split between being 4:3:1 UTD (n = 3) and Not UTD (n = 3). Of the five respondents who indicated clinic hours were problematic, only one of the children was reported as 4:3:1 UTD, one was reported Not UTD and the other three could not be determined.

Transportation

Thirteen respondents indicated transportation was a barrier to getting their child immunized. Of these 13, eight were reported as 4:3:1 UTD, four were reported as Not UTD and one could not be determined. This barrier was also looked at in relation to income. The highest reported income of the respondents for the four Not UTD children was in the \$25,000 to \$29,999 category. The Zip code of these individual's was analyzed and it was found that 99205 represented four of the affirmative responses and 99207 represented three of the affirmative responses. The other six affirmative responses came from unique Zip codes; they were 99201, 99202, 99206, 99212, 99216 and one out-of-state Zip code.

Cost

A total of nine respondents indicated cost was a barrier in getting their child immunized. Of these nine respondents, five of the children were 4:3:1 UTD, three were Not UTD and one could not be determined. Reported household income of six of these respondents was \$19,999 or less. Two of the respondents did not give information regarding household

income and one of the respondents reported a household income in the \$40,000 to \$44,999 category.

Discussion of Results

Previous immunization coverage estimates of children under two years of age in Spokane County have been limited to specific populations, i.e. WIC clinics, and children getting immunizations through health district clinics, utilizing clinic assessment software applications (CASA). This survey is the first attempt to estimate the immunization status of the general pre-school population. In order for this study to make an inference to the county a minimum 80% questionnaire completion rate was needed. A total of 206 questionnaires were completed, for a completion rate of 82.7%.

The results of this survey show 65% of the sample children are confirmed fully vaccinated for diphtheria, tetanus, pertussis, polio, measles, mumps, rubella and hepatitis B. When household information was combined with provider information, the percentage of coverage increased to 70.9%.

The likelihood of a child being fully immunized included responses from caregivers that had graduated from college or graduate school, were married and employed, lived in a household with four or less people, were not living below the poverty level, and whose sample child did not have siblings and had been taken to the health care provider four or more times in the second year of life.

A number of findings in this study aligned with other surveys. These were that the lower a family's income the less likely the survey found the child fully immunized, and children who had been on WIC or AFDC/TANF (Women, Infants, and Children or Aid to Families with Dependent Children/Temporary Aid to Needy Families) at some time in the first 19 months of life were less likely to be fully immunized.

Two areas that had been implicated in contributing to lowered immunization rates were not found in this study. Age of the respondent was not a factor in immunization status of the children in this study. Multiple providers were not an issue for participants in this survey as only four respondents indicated three or more providers. The corresponding UTD status for these four individuals did not provide a large enough base to justify any conclusions.

Very few of the respondents indicated barriers had hindered full immunization of their children. The percentage of respondents citing barriers as a problem ranged from 2.4% for inconvenient clinic hours to 6% for difficulty with transportation. Four percent cited cost as a problem.

A surprisingly low percentage (21%) indicated they received Child Profile materials; while 93% indicated they did know when it was time for their child to be immunized. A full three-quarters of the respondents (76%) kept an immunization schedule in their home. Many respondents indicated the schedule was kept as a magnet on their refrigerator.

Plan for Future Data Analysis, Use and Dissemination

While the analysis in this report is comprehensive, Spokane Regional Health District (SRHD) is interested in further analysis as community planning proceeds. Specifically, plans include weighting the data for inference to the general population. While the Health District is confident the sample is reflective of the population, staff are very interested in testing that theory and analyzing the non-responses for any significant differences.

Additionally, the SRHD is interested in reviewing the overall immunization status of Spokane County in comparison to the data reported by the CDC for the state of Washington. Currently, CDC data shows Washington State's immunization rate to be at 80%, when King County is backed out of the total. SRHD preliminary data is calculated at 72%.

Finally, there were two Zip codes within the county that had high numbers for Not UTD status; these were 99207 and 99205. In the 99207 Zip code there were 58% calculated as UTD and another 41% calculated as Not UTD or not determined. The 99205 Zip code had 56% UTD and another 44% either Not UTD or not determined. These were the only two Zip codes that had more than two children that were Not UTD or were unable to be determined. Further analysis may contribute to a better understanding of this difference and illuminate any barriers or concerns in these two areas.

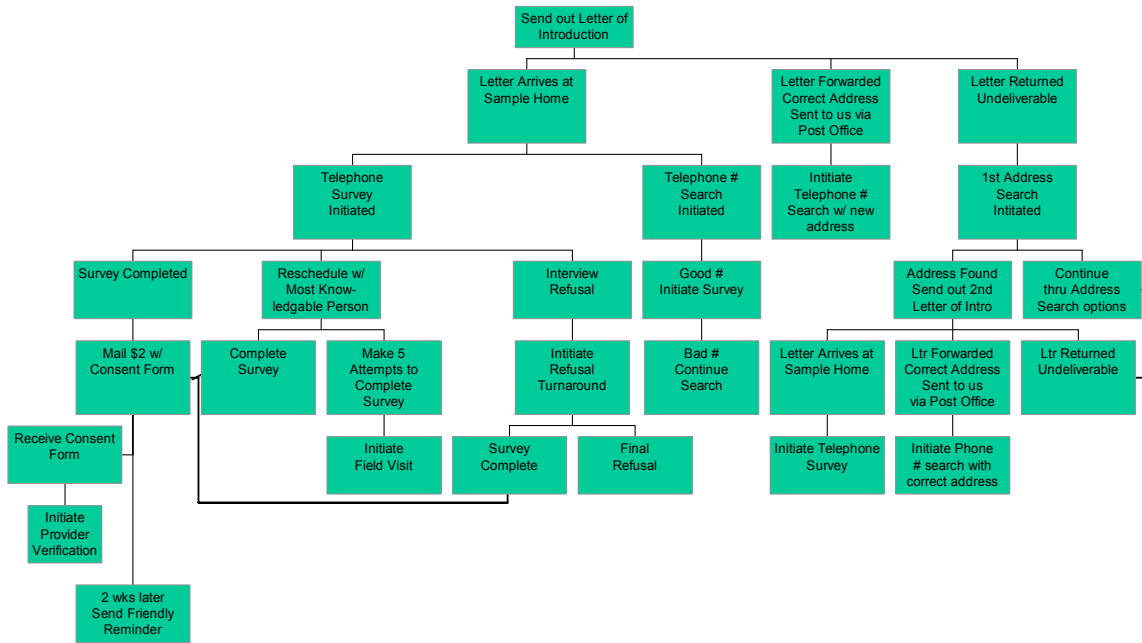
Project Lessons Learned and Recommendations

- The combination of the DOH manual and the training manual template were invaluable for the project coordinator. The training manual provided a solid foundation for developing the project. The DOH manual provided greater understanding of the purpose and dynamics of the study.
- The tracing consultant's access to DSHS files in Olympia was very helpful. Without the additional 68 valid telephone numbers from this source, successful completion of this project would have been extremely difficult.
- Local health jurisdictions that have access to the Internet should plan to conduct their own participant search. The lag time waiting for numbers to be provided by a consultant can cause a work stoppage for interviewers.
- The modified protocol worked very well for Spokane County. The refusal rate of 2.4% was comparable to the refusal rates in the other Washington Counties using the standard protocol.
- SRHD would strongly recommend LHJs to consider the unique qualities of their community and make appropriate modifications to the protocol as necessary.
- Ongoing support from DOH was helpful and provided assurance that, should difficulties arise, help was close at hand. However, LHJs should be encouraged to have as much autonomy over their local project development and coordination as they desire.
- Providing the training manual to the interviewers, with paid time for reading and studying the manual prior to beginning surveying, was seen as a great plus by the interviewers.
- The interviewers felt that questions on the questionnaire should have been explained more fully during the training. Specifically, the interviewers felt if they had been given a clearer understanding of the purpose and reason for specific questions they would have had a clearer sense of the project. This recommendation had been previously made by another LHJ, but until the project was actually underway, the intrinsic "why" was not fully understood. This could be one area where training could be very beneficial to new counties by other counties who have undertaken this project.
- One of the concerns expressed by the interviewers was that they were not allowed to call information directly. The cost per call for directory assistance was seen as prohibitive. However, when attempted, this approach yielded positive results.
- Consideration for appropriate technological equipment, such as a UTD computer with Microsoft Office software that includes Access and that has significant memory, is essential to the successful completion of this project.

- Accommodations that are conducive for interviewing are also an important consideration for LHJs planning to conduct a BCFBS using this methodology.
- Adequate office space needs to be considered when planning this project in order to maintain data confidentiality and to provide a conducive work environment.

Appendices

Appendix A - Contact Flow Chart



Appendix B - Project "Real" Timeline

September 7, 1999

- Project Coordinator Started

September 16, 1999

- Orientation for interviewers

September 22, 1999

- First introduction letter mailed out to sample participants

September 29, 1999

- Training for interviewers begins

October 1, 1999

- Completed interviewer training
- Conducted dry run interviews
- Began interviewing participants

October 15, 1999

- Received tracing consultant's internet priority list
- SRHD staff began internet search for participant phone numbers
- SRHD staff traced WIC data base

October 22, 1999

- Received tracing consultant's US West internet list

October 25, 1999

- First public service announcement aired

October 27, 1999

- Sent introduction fax to all Spokane County providers

October 28, 1999

- Received NCOA list for participants

November 4, 1999

- Sent first fax requesting provider confirmations
- Second introduction letter mailed asking participants to call SRHD

November 9, 1999

- First field visits conducted

November 12, 1999

- SRHD staff traced clinic data base

November 24, 1999

- Attempted to contact DMV

November 29, 1999

- Contacted CPS

December 1, 1999

- Made reminder calls to participants who were sent consent forms but had not returned them

December 3, 1999

- Second Consent for Release of Medical Records mailed to participants

December 6, 1999

- Mailed registered letters to participants with PO Boxes and out-of-state addresses with no known telephone numbers

December 8, 1999

- Began Teleform scanning of questionnaires

December 10, 1999

- Last field visit conducted

December 15, 1999

- Last day for interviewers

January 7, 2000

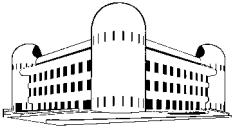
- Final completed questionnaire received N = 206
- Final request for immunization confirmation faxed

January 13, 2000

- Final Provider Confirmation received

Appendix C - Web Sites Used for Tracing

<http://www.uswestdex.com>
<http://www.switchboard.com>
<http://www.aol.com>
<http://411locate.com>
<http://infospace.com>
<http://555-1212.com>



SPOKANE REGIONAL HEALTH DISTRICT

Appendix D - September 22 Letter of Introduction

September 22, 1999

«MOMFIRST» «MOMLEGAL»
«LKAddress»
«LKCity», «LKState» «LKZIP»



Dear «MOMFIRST»:

Your child, «CHILDFIRST», has been selected to take part in an important survey about childhood immunizations. «CHILDFIRST» was randomly chosen, from over 7,000 births that occurred between September 1, 1996, and January 31, 1998, to Spokane County residents.

In the next few weeks a representative of the Health District will be calling you to conduct a short, 10-15 minute interview about your child’s shot records. Your participation in this study is completely voluntary and all information will be kept confidential. With your permission we will verify «CHILDFIRST»’s shot records by contacting your health care provider.

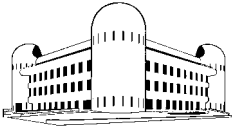
To show our appreciation for your participation you will receive a \$2 bill in the mail. You will also be eligible to enter a drawing for one of five \$100 gift certificates from Fred Meyer. The drawing will be held in December just in time for the holidays!

«CHILDFIRST» is one of only 250 children chosen to be a part of this study. It is very important for every child chosen to participate. The information you provide will be very helpful as we work to improve the health of all children. If you would like to set up an appointment time for your interview or if you have any questions or concerns, please call Alicia Thompson at (509) 324-1627.

Sincerely,

Kim M. Thorburn, MD, MPH
Health Officer

P.S. The Health District representative will ask about «CHILDFIRST»’s shot record, it will be helpful if you have it available when we call.



SPOKANE REGIONAL HEALTH DISTRICT

Appendix E - November 4 Letter of Introduction with Please Call

November 4, 1999

«FirstName» «LastName»
«Address2»
«City», «State» «PostalCode»



Dear «FirstName»:

Your child, «JobTitle», has been selected to take part in an important survey about childhood immunizations. «JobTitle» was randomly chosen, from over 7,000 births that occurred between September 1, 1996, and January 31, 1998, to Spokane County residents.

A representative of the Health District would like to call you to conduct a short, 10-15 minute interview about your child’s shot records. Your participation in this study is completely voluntary and all information will be kept confidential. With your permission we will verify «JobTitle»’s shot records by contacting your health care provider. Please call 324-1627 to set an appointment that would be convenient for you.

To show our appreciation for your participation you will receive a \$2 bill in the mail. You will also be eligible to enter a drawing for one of five \$100 gift certificates from Fred Meyer. The drawing will be held in December just in time for the holidays!

«JobTitle» is one of only 250 children chosen to be a part of this survey and because the survey is relying on a random sample, **we can not replace «JobTitle» with a different child. In order for the results to be valid it is very important for every child chosen to participate.** The information you provide will be very helpful as we work to improve the health of all children. If you have any questions or concerns, please call Alicia Thompson at (509) 324-1627.

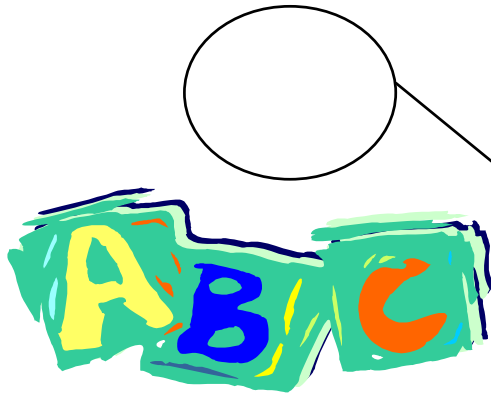
Sincerely,

Kim M. Thorburn, MD, MPH
Health Officer

P.S. The Health District representative will ask about «JobTitle»’s shot record, it will be helpful if you have it available when we call.

1101 W COLLEGE AVE • SPOKANE, WA 99201-2095 • (509) 324-1500 TTY (509) 324-1464

Appendix F - Door Knocker



Date: _____

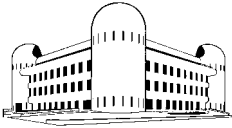
Dear MEE or BEE:

Hello! The health of Spokane County's children is very important to the citizens of our county. To find out which vaccinations (baby shots) children have received, the Spokane Regional Health District and the Washington State Department of Health are conducting an immunization survey of children 19 to 35 months old in Spokane County. Your child is one of a small number of children randomly selected from birth records for this survey.

It is important that we learn which baby shots, if any, your child PA DONG has received and how many shots have been given. An interviewer will be back in the next few days. If you have any records that show the types of vaccines your child has received please have these available when the interviewer arrives. Even if you do not have records, you will still be able to answer some of the interviewer's questions. Any information you have about this child's vaccination history is important to the survey. The interview takes between ten and twelve minutes to complete.

We could interview you by telephone, but have not been able to find a number where you can be reached. If you would prefer to have us call you, please call 324-1627 and let us know where we can reach you and when a good time would be to call you back.

If you are not the person we should contact about PA DONG's immunization information, and there is no one living with you who can provide this information, or should you have any questions about this survey, please call Alicia Thompson at 324-1627.



SPOKANE REGIONAL HEALTH DISTRICT

Appendix G - Registered Mailing December 6, 1999

We Need You!

December 6, 1999

«MOMFIRST» «MOMLEGAL»
«LKAddress»
«LKCity», «LKState» «LKZIP»



Dear «MOMFIRST»:

Your child, «CHILDFIRST», was selected to take part in an important survey about childhood immunizations. «CHILDFIRST» was randomly chosen, from over 7,000 births that occurred between September 1, 1996, and January 31, 1998, to Spokane County residents. Since this is a random sample survey, we can not replace your child with a different child. We need everyone chosen to respond.

Enclosed is a questionnaire, and a self-addressed stamped envelope. Please take a few minutes and complete the questionnaire materials. Your participation in this study is completely voluntary and all information will be kept confidential. With your permission we will verify «CHILDFIRST»'s shot records by contacting the health care provider(s) listed on the release form.

To show our appreciation for your participation, enclosed is a \$2 bill and a refrigerator magnet. When we receive the questionnaire materials, you will be entered into a drawing for, one of five, \$100 gift certificates from Fred Meyer. The drawing will be held soon!

If you chose not to participate, please let us know by calling or mailing a note. If you have any questions or concerns, please call Alicia Thompson at (509) 324-1627.

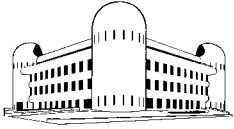
Sincerely,

Kim M. Thorburn, MD, MPH
Health Officer

1101 W COLLEGE AVE ● SPOKANE, WA 99201-2095 ● (509) 324-1500 TTY (509) 324-1464

Appendix H - Fax Sent to All Providers October 27, 1999

1101 W COLLEGE AVE ● SPOKANE, WA 99201-2095 ● (509) 324-1500 TTY (509) 324-1464



S P O K A N E R E G I O N A L H E A L T H D I S T R I C T

FAX MESSAGE

TO: All Providers of Immunizations

FROM: Alicia M. Thompson
Epidemiology/Assessment Center
SPOKANE REGIONAL HEALTH DISTRICT
1101 West College Avenue
Spokane, WA 99201

Fax No: (509) 324-3623
Phone No: (509) 324-1627
E-Mail: athompson@spokanecounty.org

Subject: Childhood Immunization Follow-Back Survey.

Spokane Regional Health District, in cooperation with the Washington State Department of Health is conducting a county wide survey to estimate the immunization coverage of pre-school children in Spokane county. A random sample of 250 children who are now between the ages of 19 and 36 months will be used. In order to achieve the level of validity required for a study of this nature, we have asked parents to give consent to contact immunization providers to verify information. We will be contacting providers and forwarding signed and dated consent forms.

SPOKANE REGIONAL HEALTH DISTRICT

Appendix I - Fax Cover Used For Specific Provider Requests

FAX MESSAGE

Date: January 10, 2000
TO: Attn: Medical Records
Dr. Randolph - Northside Family Medicine
Fax No: 466-0969
Phone No: 466-1271
FROM: **Alicia M. Thompson**
Epidemiology/Assessment Center
SPOKANE REGIONAL HEALTH DISTRICT
1101 West College Avenue
Spokane, WA 99201
Fax No: (509) 324-3623
Phone No: (509) 324-1627
E-Mail: athompson@spokanecounty.org

Subject: Childhood Immunization Follow-Back Survey.

Spokane Regional Health District, in cooperation with the Washington State Department of Health, is conducting a county wide survey to estimate the immunization coverage of pre-school children in Spokane County. A random sample of 250 children who are now between the ages of 19 and 36 months will be used. In order to achieve the level of validity required for a study of this nature, we have asked parents to give consent to contact immunization providers to verify information.

Please fax or mail a copy of the immunization record for the named children on the consent forms to the above number or address. This survey is being conducted on a limited timeline and your immediate response would be greatly appreciated. It is possible that additional consent forms will be sent to you as the remainder of the surveys are completed. If there are any changes to the format in which the information is sent to you that would be helpful to you in completing this request please let me know and I will make every attempt to accommodate your request.

This facsimile contains privileged and confidential information intended only for use by the individual or entity name above. If the reader of this message is not the intended recipient or the employee or agent responsible to deliver this information to the recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please call the sender's telephone number listed above.

Cover Page Plus _____ Page(s)

Appendix J - Map Comparing Sample vs. Respondents by Address

Appendix K - Questionnaire