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DESIGN OF THE BASELINE STUDY FOR COCHABAMBA, BOLIVIA PROJECT

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COCHABAMBA, BOLIVIA RAPID TRIP REPORT
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City and Country Visited:
Cochabamba, Bolivia

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SUMMARY

The principal purpose of this trip was to design the baseline (quantitative) study for MotherCare's long term project in Cochabamba in conjunction with the MotherCare project coordinator, CIAES staff and the MotherCare representative temporarily in residence in Cochabamba, including:

1. developing an evaluation framework (see Table 1, "Protocolo y Diseño para la Evaluación del Programa MotherCare en Cochabamba")

2. developing a protocol, including design for the evaluation,

3. describing the time frame and activities to be conducted as the scope of work for the baseline study,

4. developing a budget and budget justification (CIAES),

5. developing the study preliminary questionnaires and pretest databases in EPI-INFO, and

6. estimate further technical assistance required for the implementation and analysis of the study.

I. PURPOSE OF TRIP

The purpose of this trip was to:

(i) design the baseline (quantitative) study for MotherCare's long term project in Cochabamba in conjunction with the MotherCare project coordinator, CIAES staff and the MotherCare representative temporarily in residence in Cochabamba,

(ii). develop an evaluation framework for the baseline study,

(iii) develop a design and protocol for the project evaluation,

(iv) develop a timeline identifying all activities (i.e. the scope of work) for the baseline study,

(v) develop a budget and budget justification (CIAES),

(v) create the study preliminary questionnaires, guides and pretest databases in EPI-INFO,

(vi) develop a preliminary analytic plan for baseline, and later project, evaluation, and

(vii) estimate further technical assistance required for the implementation and analysis of the study.

II. BACKGROUND

This visit was a follow-up of the previous visits made by MotherCare and Manoff representatives, to develop the baseline survey for project evaluation, utilizing the recently completed qualitative survey and IEC workshop which identified key project interventions. The corresponding reports prepared for these trips, and particularly the summary of the qualitative survey, provides a detailed background for this visit.

III. MAJOR EVENTS

1) <u>Meetings with CIAES</u>: Meetings were held daily (including both weekend afternoons) with CIAES representative Dr. Fernando Gonzales and MotherCare representative Mary McKinerney. From these meetings, an evaluation framework, design, protocol, timeline and list of activities for the baseline study (as part of the overall project evaluation, including preliminary analytic plans for the baseline and final project evaluation) were developed. From this, CIAES staff developed a budget and budget justification for the baseline survey. Planning and review meetings were also held jointly and independently with Drs. Roberto Vargas, Giovanna Darras Chiarrelli, and Dr. Herrera (representatives of CIAES). These

meetings focussed on development of the study preliminary questionnaires, guides and pretest databases, sampling, further technical assistance, and management of the baseline study.

2) Meetings with Unidad Sanitaria, Facultad de Medicina (Dept. Epidemiologia, Universidad), DIEMED, ONG: Independent meetings were held with each group to update them on the MotherCare project. Four joint meetings with CIAES representatives, Mary McKinerney, Eduardo Vexina and Drs. Magaly Zannier (U.S.), Rene Lascano (Fac. Med.), Reuben Arandia and Luis Morales (DIEMED and Maternity Hospital), and Fernando Rocabado (ONG Coordinator) were held to review and discuss the project objectives, baseline and evaluation protocol, preliminary questionnaires and sampling strategy.

3) Meetings with MotherCare Coordinator: Eduardo Vexina attended all but the final joint meetings with the Unidad Sanitaria, Facultad de Medicina and DIEMED, and attended some of the meetings with Dr. Fernando Gonzales and CIAES, in addition to time spent visiting the project areas. His input focussed on sampling and questionnaire development.

4) Products from Trip: The evaluation framework for the Cochabamba project is found in Table 1 of the protocol and design of the Cochabamba MotherCare project, "Protocolo y Diseno para la Evaluacion del Programa MotherCare en Cochabamba", Appendix 1. This includes the research (population based pre-post) and sampling designs for the project. The population based evaluation will encompass only the areas of the city with a high concentration of low-income residents, many of which are directly serviced by MEDICO or PROFEMA, and all of which constitute the target population of the IEC intervention. The protocol includes maps with numbered manzanos and lists of the manzanos randomly chosen for the baseline evaluation to assure that a representative random sample will be obtained.

Additionally, the project will be monitored on a period basis (semi-annually) to record, observe and evaluate intra-institutional changes in health services (including the major Unidad hospitals, MEDICO, PROFEMA, COMBASE and Carcel clinics/hospitals). Prevalence statistics (maternal, neonatal and infant mortality) is not an objective of the population based survey as 1992 census data will provide stronger estimates of these rates; still these indices will be measured to describe the causes of such events on a population based case-encountered basis. Thus, the baseline is streamlined to provide data about a limited number of variables for the sole purpose of pre-post comparison and project evaluation.

Appendix 2 provides a preliminary guideline to interviewer training adapted from guidelines written by Ernesto Pinto for the Kangaroo Mother Method study in Ecuador. Supervision and unbiased elicitation of information were stressed in all meetings discussing data collection.

Appendix 3 provides the budget, budget justification and

timeline of the baseline study. Items requiring further clarification and particular note in contract development are: (1) a minimum of one supervisor to five data collectors (the auxiliary principal investigator and/or principal investigator thus must act as study supervisor for the data collection period) and (2) the data collection instrument must be translated to Quechua, pretested in both Spanish and Quechua, appropriately modified in both languages, and a Quechua guide (i.e. the interview with questions exactly as they must be read) must be used to conduct interviews in Quechua when a woman feels most comfortable conversing in Quechua.

Appendix 4 provides the preliminary study questionnaires which should be discussed in small informal groups with women in census sector 300 which is a similar but non-study site before formally pretesting the questionnaire (which can also be done in sector 300).

Appendix 5 provides the preliminary analytic plan for the baseline and final evaluation.

5) Recommendations: The CIAES staff has a various types of expertise. To assure that the baseline is conducted in a manner that provides valid data, I suggest that:

a) Dr. Fernando Gonzales be named as the principal investigator in the contract to CIAES for the baseline survey;

b) If possible, Mary McKinerney should actively participate in the interviewer training, oversight of pretesting and questionnaire modification; if she is not available, I would suggest this be assumed by Pat Taylor, myself, Kathryn Tolbert, Ernesto Pinto or someone else with appropriate skills and experience training interviewers;

c) Mary McKinerney and/or Michael del Aguila should be responsible for working on finalizing the EPI-INFO databases and describing data entry using EPI-INFO;

d) Post entry data cleaning and assistance in data analysis should be provided by me.

IV CONCLUSIONS, RECOMMENDATIONS AND NEXT STEPS

This trip was successful in making considerable progress on the detailed protocol, pretest questionnaires, guidelines, data base, analytic plan, budget, and scope of work (activities). The main recommendations for future action include:

1) Rapid development of the contract to CIAES for the baseline survey.

2) Maintaining periodic contact between JSI/Population

Council/CIAES, including any negotiation or changes in budget/scopes of work.

3) Monitoring progress of baseline study.

4) Scheduling of follow-up trip by Dr. Sloan for data analysis.

V APPENDICES

1. Protocolo y Diseno para la Evaluacion del Programa MotherCare en Cochabamba
2. Preliminary guideline to interviewer training
3. Budget, budget justification and timeline of the baseline study
4. Preliminary study questionnaires
5. Preliminary analytic plan for the baseline and final evaluation

APPENDIX 1

Protocol and Design for Evaluation of MotherCare Program in Cochabamba

PROTOCOLO Y DISEÑO PARA LA EVALUACION DEL PROGRAMA MOTHERCARE EN COCHABAMBA

INDICE

I. Introducción

II. Problemas de Salud Reproductiva

III. Definición de los Problemas

IV. Diseño de un Estudio Investigativo

I. Introducción

El Programa MotherCare esta realizando un proyecto en Cochabamba con los fines de mejorar los conocimientos y practicas de salud materna y neonatal. El proyecto esta en marcha de desarrollar e actualizar tres medios de intervencion para lograr sus metas. Los medios de intervencion sera: capacitacion, IEC, y equipamiento.

II. Problemas de Salud Reproductiva on Cochabamba

Por parte de un estudio cualitativo que cumplio CIAES por el Programa MotherCare, existe una definicion sensata y reciente de los problemas de salud reproductiva al nivel local. Los problemas prioritarias encontrados por este estudio son: falta de control prenatal; baja conocimiento y utilizacion de servicios para los signos de peligro en el embarazo, parto, y tiempo posnatal y neonatal; el manejo del parto domiciliario incluso el cuidado del cordon (para ser hygienico y sano), el uso de pujantes peligros, y el hacer manteo violento; el manejo del parto hospitario (para ser aceptable a las mujeres); el descuidado del recien nacido; la baja tasa de mujeres que dan leche calostro a sus ninos y la alta tasa que utilizan mamaderas para dar alimentacion (aqua de anis, etc.) a sus recien nacidos; y la baja conocimiento y utilizacion de planificacion familiar.

III. DEFINICION DE LOS PROBLEMAS LOCALES

INDICES ESENCIALES

QUE QUEREMOS CAMBIAR	MEDIO DE ▲	EFECTO EST.* %Base	▲	N
I.CUIDADO PRENATAL				
a.Num. veces:1;>1; ≥3		75% =0	65%	328
c.Porque		10%	25%	44
II.CUIDADO PARA EMBARAZOS COMPLICADOS				
a.Que hizo: ↑util. de servicios institucionales, personas capacitadas		2%	4% **	870
c.Referir: por si misma (vea X); por 1°,2°, nivel de servicios		5% 1%	9% 5%	626 250
III.PARTO				
a.Quien (↑ institucional) + ↑Capacitada		20%	25% **	856
b.Porque		10%	30%	59
IV.PARTO SANO				
a.Manteo		10%	5%	424
b.Cortar cordon: quien,como (contacto limpio), sangre del cordon		25%	35%	137
c.Pujantes peligrosos		75%	65%	328
V.CUIDADO RECIEN NACIDO				
a.a.Quien + ↑Capacitada		25%	35%	328

b.Que hace: respiracion, banar, abrigan, donde dejan/por cuanto tiempo		30%	50%	162
c.Atencion especial a placenta (descuido recien nacido)		30%	50%	162
d.Juntar a la madre		30%	50%	132
VI.CONOCIMIENTO DE SIGNOS DE RIESGO				
a.Prenatal:edema cara/manos; sangrado; ↑cuidado/ uso de servicios		1% 70% 1%	5% 80% 5%	250 292 250
b.Parto:labor prolongado; ataques; mala presentacion; ↑cuidado/uso de servicios		85% 5% 85% 5%	90% 15% 90% 10%	680 132 680 424
c.Posnatal: hemorragia; placenta retenida; fiebre; ↑cuidado/ uso de servicios		85% 85% 85% 5%	90% 90% 90% 10%	680 680 680 424
d.Recien nacido: frio; amarillo; pequeno; choqueos; fiebre; azul; ↑cuidado/ uso de servicios		5% 5% 5% 5% 85% 85% 5%	15% 15% 15% 15% 90% 90% 10%	132 132 132 132 680 680 424
VII.PLANIFICACION FAMILIAR				
a.Conocimiento		20%	40%	80
c.%Uso meth.mod.		1%	2.5 %**	896
e.Miedo(porque no usar)		80%	60%	80
VIII.PAP				

a.Conocimiento		5%	10%	424
b.%Tuvieron: total; examinados por insertar DIU		8%	12% **	686
XI.AMAMANTAR				
a.%Calostro		50%	60%	861
b.Empezar temprano (cuando)		40%	60%	97
d.Uso mamadera		70%	60%	355

1 A = Capacitacion al nivel familiar
B = Capacitacion al nivel de servicio 1° nivel
C = Capacitacion al nivel de servicio 2° nivel
D = Capacitacion al nivel de servicio 3° nivel
E = IEC Televisor
F = IEC Radio
G = IEC Otro medio
H = Mejorar deficiencia de Servicios
I = Equipamiento

* α=0.05, 1-β=0.80, two tailed test
** α=0.10, 1-β=0.80, two tailed test

IV. DISEÑO DE UN ESTUDIO DE INVESTIGACION

Hay dos razones principales para conducir un estudio:

1. Proporcionar una evaluacion de linea de base contra la cual se pueda avaluar la efectividad de una intervencion mediante comparacion del seguimiento y de las tasas de linea de base.

2. Determinar la magnitud de los problemas de interes y de los factores de riesgo asociados a los problemas <u>que son susceptibles a una intervencion pragmatica</u>, y

a. Seleccion del Diseno: Datos obtenidos de los archivos de los hospitales y clinicas proporcionan una indicacion de que se ha observado ciertos problemas o patrones de utilizacion de servicios en la gente auto-seleccionada que se presenta en algunos lugares ofreciendo atencion en salud. La validez de estos datos aumenta directamente con el numero de casos vistos y de clinicas y hospitales que observan un problema dado. Sin embargo,, los datos de hospitales y clinicas, generalmente no representan los problemas tal como existen entre la poblacion. Esto es especialmente problematico en Cochabamba donde se encontro en el estudio cualitativo baja utilizacion de los servicios formales de salud. Tambien no es facil predecir si el hospital o clinica sobre-representan o, por el contrario, sub-representa posibles problemas de salud de la comunidad. Normalmente,, la mayor parte de la gente que asiste a un hospital o clinica lo hace porque estan enfermos; aun asi, los pacientes de hospitales o clinicas a menudo representan a aquellos con una mejor economia (y, posiblemente, en un estado de salud superior) que el resto de la sociedad.

La falta de observacion hospitalaria y clinica, de un problema tampoco excluye la existencia de la misma, sino que puede depender de la rapidez de progresion de la situacion y de su tasa de caso-fatalidad. Las situaciones que son rapidamente fatales tienen mas posibilidades de ser pasadas por alto en los registros de un hospital o clinica y, a menos que la situacion tenga cierta prevalencia, opacadas por evaluar de este medio.

Por eso, el grupo colaborativo que desarrollo y reviso el diseno para evaluar los efectos del Proyecto MotherCare en Cochabamba, decidio monitorizar los datos hospitalarios y clinicos solo para la revision de indices de produccion y observaciones de cambios de comportamiento de los servicios formales en el manejo de parto y accesibilidad de los equipamientos donados por el proyecto.

Los estudios basados en la poblacion pueden proporcionar una figura representativa de la existencia y magnitud de los problemas de salud en el area de interes. Una revision de la literatura disponible y con el grupo colaborativo determino que, aunque no

existe informacion relativamente reciente de las tasas de mortalidad materna, infantil y neonatal, que el censo del proximo ano va a dar datos fuertes de estas tasas. Entonces este estudio no se pretenda estimar estas tasas con fina precision, pero mejor va a recolectar datos sobre la mortalidad materna, infantil y del recien nacido por poder describir las causas encontradas por estos muertes.

Los datos del estudio cualitativo ayudan a tomar decisiones con relacion al tipo de problemas que se incluira o exlcuira en la evaluacion; la poblacion que se investigara, las consideraciones de muestreo y la amplitud necesaria del muestreo.

Por ser el mejor, y tal vez el unico valido y representativo, modo de evaluar el proyecto MotherCare de Cochabamba, eleccionamos un estudio basado en la poblacion para evaluar los logros de las intervenciones. Tambien, porque una gran parte de las intervenciones seran realizado por IEC (incluso comunicaciones masivas), cubriendo el universo del area urbana/peri-urbana de Cochabamba, seleccionamos la metodologia pre-pos sin controles (ademas de la linea de base), por la falta de poblaciones comparables en el mismo area geografica no expuestas? (exposed) a las intervenciones del proyecto. Decidimos no buscar otras areas geograficas para obtener una poblacion control por el gran aumento de costo de hacer la evaluacion con la baja posibilidad encontrar poblaciones similares adecuadamente.

b. Modo de Establecer los Objetivos del Estudio

Una meta del proyecto MotherCare en Cochabamba es:

" aumentar el conocimiento consciente y la utilizacion de todos los servicios de salud reproductiva ...".

Los objetivos de esta meta pueden ser establecidos de una manera explicita que permita la evaluacion. Los objetivos de esta meta podrian ser:

1. Aumentar el conocimiento y la conciencia de las mujeres acerca de la provision de servicios obstetricos de prevencion disponibles a partir de (lugar 1, lugar 2, etc.) de un 10% en el momento del estudio a un 25% dos años despues de realizado el estudio.

2. Aumentar el porcentaje de mujeres que escuchan mensajes por la radio acerca de la disponibilidad y utilizacion de botiquines de parto limpio de un 0% en el momento del estudio (cuando no habia mensajes radiales) a un 50% dos años despues de realizado el estudio.

3. Aumentar la proporcion de mujeres que admiten los botiquines de parto limpio e un 5% en el momento del estudio a un 25% dos años despues.

4. aumentar la proporcion de mujeres que usan el botiquin de parto limpio de un 1% al momento del estudio a un 10% dos años despues.

Los puntos 2, 3 y 4 le permiten al investigador evaluar en que forma han impactado los mensajes radiofonicos el reconocimientos y utilizacion de los botiquines porque permiten evaluar quienes recibieron y quienes no recibieron la intervencion (mensajes radiofonicos), si hubo un reconocimiento mayor de botiquines en aquellas que escucharon los mensajes o en aquellas que no nos escucharon, y, si fue asi, si este mayor reconocimiento llevo a un incremento de la utilizacion de los botiquines. La habilidad para evaluar esto es maximizada por la selecccion de objetivos claves del proyecto y por el establecimiento de los mismos en cuantificables y los terminos limitados de tiempo.

Los objetivos del estudio son especificados por un grupo de personas, representando el director del proyecto y consultores de epidemiologia y IEC por MotherCare, CIAES, la Unidad Sanitaria , Facultad de Medicina, DIEMED, y las organizaciones no gubernamentales de Cochabamba. El concenso del grupo (o la mayoria) se beneficia con la seleccion de objetivos del estudio porque ayuda a discriminar entre los objetivos que son de interes pero innecesarios versus aquellos que son esenciales.

C. Creacion del Cuestionario

Un cuestionario bien desarrollados tiene los siguientes atributos: claridad en las preguntas, simplicidad y ausencia de ambiguedad, corta extension, buena composicion con claro flujo de una pregunta a otra, items y codigos adecuados esenciales para el analisis de datos e instrucciones faciles de seguir que se puede distinguir de las preguntas mismas.

1. Definicion por los Objetivos del Estudio

La finalidad e la recoleccion de datos siempre debe ser claramente definida. La informacion recolectada debe estar directamente relacionada a los objetivos del proyecto, es decir, a la planificacion, el manejo o la evaluacion de su proyecto. Esta recoleccion debe ser simple. Por eso, el grupo colaborativo se establecio cuadros (arriba) para asegurarse de que las preguntas y los codigos proporcionaran la informacion necesaria para las evaluaciones transversal, preliminar y posterior del proyecto.

Por evitar el error comun en el desarrollo de cuestionarios de empezar por escribir preguntas, desarrollamos las **"Estructuras de Cuadros o Tablas"**, que fueron desarrolladas para identificar la informacion requerida para los analisis transversal, preliminar y posterior del proyecto **deben dictar los items para inclusion en los cuestionarios**, y, aun entonces, solo los mas pragmaticos y utiles y **unas cuantas** variables descriptivas esenciales (como la edad)

deberan ser incluidas en los cuestionarios. Por evitar otro error comun de repetir el circulo durante el desarrollo del cuestionario, hemos desarrollado una entrevista preliminaria tomando preguntas de los cuestionarios que han sido desarrollados, pre-probados, modificados, pulidos. uniformados y utilizados por varias instituciones (incluyendo DHS, NCHS/HANES y INCAP) por expertos en este campo. Despues revisamos el primer instrumento para reemplacer palabras no comunes a modismos que encontro el estudio cualitativo que se utilizan en Cochabamba. En el Apendice 1 se ve la entrevista preliminaria (pre-probado) para la recoleccion de datos.

Por el intento (cuantificar) y tamano de la entrevista, las preguntas pueden son formuladas en manera cerrada (pre-codificada). Adicionalmente, las preguntas cerradas tienen la ventaja de dar informacion precisa y uniforme.

Las instrucciones claras para los entrevistadores seran distinguibles de las preguntas de un cuestionario porque aparecen entre parentesis en LETRAS MAYUSCULAS. Las instrucciones existen solo porque son importantes, por lo tanto es importante que sean utilizadas coherentemente y que esten disponibles. Las instrucciones integradas en el cuestionario son usadas coherentemente y no requieren tiempo adicional para verlas en una guia separada.

De igual manera, las secuencias que se puede saltar deben ser facilmente identificables apareciendo entre parentesis con una marca que indique "pasar a" (→) numero de la pregunta en este espacio). Las secuencias que se puede saltar a las que se refiere de esta manera, son mas faciles de seguir y reducen el abultamiento del cuestionario en comparacion con las instrucciones escritas referentes a pasar a otra pregunta.

Los Sondeos son frases que pueden ser leidas solo si un entrevistado aparentemente no entiende una pregunta; debe aparecer entre parentesis en letras minusculas. Las preguntas deben aparecer sin parentesis, siempre en letra minuscula.

MODELO DE PRESENTACION

Buenos(as) (dias/tardes/noches). Mi nombre es (INSERTE SU NOMBRE AQUI) y estoy trabajando con CIAES. Estamos realizando un estudio de investigacion sobre la salud de las mujeres y los niños en el area urbana de Cochabamba. La informacion que recogeremos con el estudio sera usada para ayudarnos a planificar servicios de salud que esperamos que mejoren la salud de las mujeres y niños en el area. Estamos preguntado a las mujeres embarazadas ahora mismo o que estuvieron embarazadas en año pasado, si pueden participar en este estudio permitiendonos entrevistarlas. Hay alguna mujer entre los 15 y 45 años que actualmente vive aqui? ("NO" --> FINAL)
Como se llama? (ESCRIBA EL NOMBRE DE LA MUJER _____)

(NOMBRE DE LA MUJER _____) esta embarazada ahora o ha estado embarazada el año pasado? ("NO" --> FINAL) Puedo hablar con ella? Gracias.

(EMPIECE LA ENTREVISTA).

d. Prueba preliminar: Fundamentos, Validez, Utilidad

Despues que del desarrollo del cuestionario en borrador, debe ser puesto a prueba con entrevistados semejantes a los que habra en el estudio. Para hacerlo tendra que calcular la dimension de la muestra del estudio (si no lo sabe ya) y seleccionar sus propios lugares de estudio para evitar que sean incluidas en las areas de pruebas preliminares (vea la siguiente seccion).

Una prueba preliminar es en realidad una prueba en pequeña escala de factibilidad para determinar si las preguntas son dificiles de entender y, asi, malinterpretadas; o si crean demasiada susceptibilidad (o son prolijas) y provocan distraccion en las respuestas (lo que puede verse en muchas respuestas a una misma categoria de codificacion: "si", "no" o "no sabe") al final del cuestionario. Las pruebas preliminares tambien proporcionan informacion util sobre la claridad de las instrucciones de los instrumentos donde y por que los entrevistadores tienen problemas ya sea con la entrevista o con el registro de las respuestas. Tambien deben ser conducidas con 25 a 30 personas en cada lengua (Espanol y Quechua). Con este conocimiento, las instrucciones acerca del cuestionario, el estudio y la codificacion pueden ser modificadas para ser mas facilmente utilizadas, claras, que no provoquen reacciones contrarias, y razonablemente cortas. , Si se cambia el orden o significado de las preguntas, se hara una segunda prueba preliminar con 10 personas usando el segundo instrumento en borrados antes de terminar y reproducir el cuestionario.

Una vez que el cuestionario y la presentacion han sido preliminarmente probados, los resultados de la prueba pueden ser discutidos y reformulados antes de reproducirlos para el estudio de linea de base.

3. Estrategia del Muestreo:

Todos los estudios deben balancear las consideraciones de la representatividad de la muestra, de la logistica y de los recursos disponibles. La probabilidad del muestreo es un campo en todo su derecho, y esta basado en el logro de una posibilidad conocida de seleccion para todas las personas. Las muestras al azar son muestras de probabilidad que seleccionan unidades de muestra de manera que cada unidad tenga una probabilidad fija de seleccion.

La muestra simple al azar indica que todas las personas tienen la misma posibilidad de seleccion. El atributo de igual probabilidad de seleccion se obtiene mediante una lista de todas las personas dentro de la poblacion de interes, excluyendo a aquellas que tengan los criterios que definen a la poblacion

objetivo, numerando a las personas restantes en orden ascendente, y usando una tabla de numeros al azar para seleccionar el numero de personas que se requiere para obtener la muestra necesaria (incrementada para compensar las personas que no contesten, la perdida de seguimiento y el efecto de diseño).

La muestra simple al azar, que selecciona a personas de entre la poblacion al azar, parece superficialmente la manera mas simple de elegir la muestra del estudio (o evaluacion). La eleccion facil de personas al azar requiere listas completas de todas las personas comprendidas en la poblacion de interes con datos adecuados para excluir a aquellas que caigan fuera de la definicion de poblacion objetivo. Obviamente, tener esas listas son poco numerosas lo que hace que el muestreo de grupos, es decir la eleccion de grupos de personas (como por ejemplo, todas las que viven en una cuadra o en una aldea), sea mas simple y mas pragmatica que la muestra simple al azar.

De igual manera, elegir y entrevistar a grupos mas grandes de gente (tales como aquellos conjuntos por cuadras, aldeas, etc) es logisticamente mas facil (y consume menos tiempo y menos dinero) que elegir conjuntos mas pequeños (como los de casas o grupos familiares), aunque el muestreo con menos grupos mas grandes da una muestra menos representativa que la eleccion de personas o pequeños grupos por procedimientos uniformes de seleccion al azar. Aumentando el tamaño de muestra razonablemente (25%) compensara la perdida de representatividad asociada a la muestra de grupos (llamada tambien el efecto de diseño) puesto que el numero total de grupos incluidos en la muestra es adecuado para los fines del estudio.

En Bolivia, la seleccion de la muestra sera conducida de una forma agrupada para mantener un costo razonable del estudio de base y de las evaluaciones preliminar y posterior, que sera logisticamente practica y obtendra una muestra adecuadamente representativa.

La seleccion de la muestra es conducida asi:

Paso #1. Obtener mapas de todas las manzanos por sector censal, numerar todas las manzanos y dividir 4% de la poblacion entera (estimado igual del % de mujeres embarazas en un ano) en el area geografica de interes (i.e.: las areas urbana y perifericas de Cochabamba) y excluir las areas que no son de interes (manzanos donde vive gente de alto estrato socioeconomico, categorizados "C").

Paso #2.Calcular el % de la poblacion de interes (todos categorizados "A" y "B") para cada sector censal. para tomar este % de la muestra del sector. (Representacion proporcional de 17 sectores).

Paso #3.<u>Muestra de grupos</u>: Muestra de grupos (la unidad mostreal es el manzano, seleccionado con una representacion proporcional por

sector). Usando los mapas adjuntos, y anumerando todos los manzanos (excepto de los sectores excluidos) el area del proyecto consta de:

A SECTOR	B POB X 4%	C # MAN- ZANOS	D B / C	E B / 11,064	F E X 2,250	G F / D
010	400	212	1.89	3.62	81	43
020+ 021	2,202	513	4.29	19.90	448	104
030	617	577	1.07	5.58	126	118
040	378	118	3.20	3.42	77	24
050	575	165	3.48	5.20	117	34
060+ 061	752	392	1.92	6.80	153	80
070	353	90	3.92	3.19	72	18
200	415	150	2.77	3.75	84	30
210	468	360	1.30	4.23	95	73
230	409	89	4.60	3.70	83	18
240	573	117	4.90	5.18	117	24
250	1,527	149	10.25	13.80	311	30
260	249	47	5.30	2.25	51	10
270	406	105	3.87	3.67	83	21
280	972	289	3.36	8.79	198	59
290	664	184	3.61	6.00	135	37
300	104	119	0.87	0.94	2	2
TOTAL	11,064			100.02%		

A = Pob. Entera x 4% = numero de mujeres entre 15 y 45 embaradas = numero de mujeres entry 15 y 45 que terminaron un embarazo en el ano pasado
B = Numero de Manzanos por sector
C = % de la poblacion de mujeres entry 15 y 45 que estan embarazadas o terminaron un embarazo en el ultimo ano que vive en cada manzano del sector
D = % del total de la poblacion elegible para mostrar (mujeres entry 15 y 45 que estan embarazadas o terminaron un embarazo en el ultimo ano) que vive en el sector
E = Numero de mujeres que deben ser entrevistadas (suponiendo que

la mitad del numero seran mujeres embarazadas y la otra mitad que terminaron un embarazo en el ano pasado)
F = Estimacion de cuantos manzanos entraran en la muestra por cada sector.

El tamaño promedio de manzano puede ser calculado igual al total de la poblacion del area (en base al ultimos datos poblacional disponible, pese a que este estara algo subestimado. El numero promedio de mujeres en un manzano que estuvieran actualmente embarazadas o lo estuvieron el pasado año se puede calcular multiplicando el total de la poblacion del area por 4% (la proporcion calculada de la poblacion femenina entre los 15 y 45 años de edad mujeres actualmente embarazadas y, en equivalencia, mujeres que estuvieron embarazadas el año pasado en un manzano promedio.

De esta manera hicimos una lista de numeros (con un 10% aumento del numero total estimado por sector para asegurar encontrar el numero de mujeres requeridas para la muestra del sector) cogidos de la tabla de numeros aleatorios en manera estandard, tomemos una muesta de manzanos de cada sector. La lista y el mapa de los manzanos elegidos esta en el Apendice 2. Tendra cuidarse en organizar el orden de visitar y entrevisar los manzanos a caso de que hay mas mujeres por manzano y la muesta requiere menos manzanos.

Ademas, excluyemos el manzano 300 de la muestra por los pocos numeros de mujeres elegibles para la muestra (2) y por la falta de ser representativa dos mujeres para todas ellas del mismo sector.

APENDICE 2: LISTA DE MANZANOS ELEGIDOS POR SECTOR EN ORDEN DE SELECCION

010:→	060	071	113	063	183	155	042	164	211 ...
...→	152	072	189	147	092	101	002	167	198 ...
...→	186	058	124	062	166	012	083	076	153 ...
...→	130	181	065	136	106	129	108	056	091 ...
...→	146	043	011	204	078	138	003	102	119 ...
...→	070	033	015	122	117	017	154	016	121

020 (52% of 020+021 sample): Read →

046	133	266	206	048	195	205	038	134	222
007	105	032	093	051	109	099	077	183	231
003	062	034	258	152	215	145	029	226	236
081	147	239	101	033	164	053	252	202	037
208	167	015	115	001	055	112	242	218	103
175	086	235	179	074	234	143	181	042	225
212	224	060	211	233	113	126	247	141	

021 (485 OF 020=021 sample): Read →

084	104	050	203	191	208	025	131	002	017
036	199	072	097	243	147	095	117	008	026
080	167	246	102	058	096	179	039	090	040
013	048	109	154	168	033	006	014	042	073
030	038	007	115	119	188	192	094	241	015
100	122	024	105	158	190	005	016	099	123

CUADRO Nº1: POBLACION POR AREA CENSAL
COCHABAMBA - 1991

			TOTAL	
A 010	Condebamba	♂ 4862 ♀ 5137	9999	medico ✓
A 020 +021	Sarco, Mayorazgo Villa Mono Rancho	18864 20768	39632	medico ✓
A 030	Tupuraya, V.Moscu Barrio Petrolero Av.Kenedy, Mesadilla, Castillo	7397 8026	15423	
A 040	Queru Queru	4202 5251	9453	
B 050	Cala Cala	6553 7818	14371	Seg Social
A 060 +61	Prolong. Hipodromo	9061 9733	18794	
B 070	Hipodromo	4184 4643	8827	Promefa ✓
C ~~080~~	Hipodromo	5513 6442	11955	
C ~~090~~	Casco Viejo	1460 1927	3387	
C ~~100~~	Casco Viejo	1264 1537	2801	
C ~~110~~	Casco Viejo	1791 2123	3914	
C ~~120~~	Casco Viejo	1348 1631	2979	
C ~~130~~	Casco Viejo	2942 3197	6139	
C ~~140~~	Casco Viejo	2484 2922	5406	
C ~~150~~	Casco Viejo	1431 1671	3102	
C ~~160~~	Casco Viejo	1998 2475	4473	
C ~~170~~	Casco Viejo	2374 3060	5434	
C ~~180~~	Muyurina	4370 5556	9926	Maternidad Viedma (UNIV) > monitor service stats
C ~~190~~	Las Cuadras	2313 2885	5198	
B 200	Las Cuadras	5099 5269	10368	Combase

			TUTAL
A 210	Alalay Barrio Minero	8150 3561	11711
C ~~280~~	Alalay	4553 4810	9363
A 230	Alalay	4824 5391	10215
A 240	San Miguel-Cerro Verde	7021 7298	14319
A 250	Huayrakasa Tieti	19007 19166	38173
B 260	Jaihuayco	2979 3238	6217
A 270	Jaihuayco	4906 5240	10146
A 280	Champarrancho Mayca, V.Mejico	11942 12349	24291
A 290	Prolong.Chimba	8004 8600	16604
A 300	Sarapolqula	1335 1351	2686
			335306

medico ✓ MEDICO

INSDS (indirect only po Unidad Sanitar...

medico?

(Contra Cancer: El Binto
Carcel ¢
medico Champarrancho - parte no periurbana) excluyeros

Σ A+B ¢ = 132,839

decidimos
medir impacto del programa solo al área periurbano

y medir datos de produccion en los demas

CUADRO N°2: SITUACION SANEAMIENTO BASICO EN AREA CENSAL
COCHABAMBA - 1991

AREA CENSAL	AGUA %	LUZ %	ALCANTARILLADO	CLASIFICACION
010	15	85	8	A
020	6	85	6	A
021	60	90	30	A
030	55	73	26	A
040	77	84	41	A
050	88	95	68	B
060	24	92	15	A
061	22	90	12	A
070	90	95	57	B
080	92	94	75	C
090	95	96	92	C
100	96	98	97	C
110	92	96	93	C
120	93	96	96	C
130	94	96	82	C
140	86	95	76	C
150	94	95	92	C
160	92	95	84	C
170	95	96	95	C
180	94	97	91	C
190	97	99	93	C
200	91	98	59	B

AREA GENERAL	AREA %	LUZ %	ALCANTARILLADO	CLASIFICACION
210	60	82	33	A
220	91	83	77	C
230	84	84	34	A
240	82	83	10	A
250	18	77	1	A
251	20	70	2	A
260	93	96	41	B
270	77	95	16	A
280	40	85	6	A
290	62	84	17	A
300	50	99	1	A

PROTOCOL AND DESIGN FOR EVALUATION OF MOTHERCARE PROGRAM IN COCHABAMBA

INDEX

I. Introduction

II. Reproductive Health Problems

III. Definition of Problems

IV. Research Study Design

I. Introduction

The MotherCare Program is conducting a project in Cochabamba, with the goal of improving the awareness and practices regarding maternal and neonatal health. The project is currently in the process of developing and updating three means of intervention to achieve its goals. The interventions will be training, IEC, and equiping.

II. Reproductive Health Problems in Cochabamba

A cualitative study by CIAES for MotherCare has recently judiciously defined the local reproductive health problems. The priority problems encountered by this study are: lack of prenatal control; little awareness of danger signs during pregnancy birth and the postnatal and neonatal periods, and utilization of services; home birthing practices, including cord care (to be hygienic and healthy), the use of dangerous labor-augmentation and violent massages; management of hospital births (to be acceptable to women); the lack of care for the newborn; the low rate of mothers feeding their babies colostrom, and the high rate of mothers using bottles (anis water, etc.) with their newborns; and the lack of awareness and low utilization of family planning.

III. Definition of Local Problems

TABLE 1: ESSENTIAL INDICES

WHAT WE HOPE TO CHANGE	MEANS OF ▲	EST. EFFECT* %Base ▲		N
I. PRENATAL CARE				
a. Num. times:1;>1; ≥3		25%	35%	328
c. Why		10%	25%	44
II. CARE FOR COMPLICATED PREGNANCIES				
a. What she did: ↑util. of institionl services, trained people		2%	4% **	870
c. Referred: by self (see X); por 1^0,2°, level of services		5% 1%	9% 5%	626 250
III. BIRTH				
a. Who (↑ institutional) + ↑Trained		20%	25% **	856
b. Why		10%	30%	59
IV. HEALTHY BIRTH				
a. Massage		10%	5%	424
b. Cord cutting: who, how (clean contact), cord blood		25%	35%	137
c. Dangerous labor augmentors		75%	65%	328
V. NEWBORN CARE				
a.a. Who + ↑Training		25%	35%	328
b. What does she do: respiration, bathe, cover up, where is baby left/for how long		30%	50%	162
c. Special care for placenta (neglecting the newborn)		30%	50%	162
d. Placing baby with the mother		30%	50%	132
VI. RECOGNIZES SIGNS OF RISK				

a. Prenatal:edema face/hands; bleeding ↑care/ use of services		1% 70% 1%	5% 80% 5%	250 292 250
b. Birth: prolonged labor; attacks; malpresentation; ↑care/use of services		85% 5% 85% 5%	90% 15% 90% 10%	680 132 680 424
c.Postnatal: hemorrhage; retained placenta; fever; ↑care/ use of servicios		85% 85% 85% 5%	90% 90% 90% 10%	680 680 680 424
d. Newborn: cold; yellow; small; blockages; fever; blue; ↑care/ use of services		5% 5% 5% 5% 85% 85% 5%	15% 15% 15% 15% 90% 90% 10%	132 132 132 132 680 680 424
VII. FAMILY PLANNING				
a. Awareness		20%	40%	80
c. % Use of modern methods		1%	2.5 %**	896
e. Fear(reason for not using)		80%	60%	80
VIII. PAP SMEAR				
a. Awareness		5%	10%	424
b. %Had one: total; examined for IUD insertion		8%	12% **	686
XI. BREASTFEEDING				
a. % Colostrom		50%	60%	861
b. Begin early (when)		40%	60%	97
d. Use of bottle		70%	60%	355

1. A = Training at the family level
   B = Training at first service level
   C = Training at second service level
   D = Training at third service level
   E = Television IEC
   F = Radio IEC
   G = Video IEC

H = IEC Flipcharts (?)
I = IEC Signs
J = IEC Brochures
K = IEC by Doctor
L = IEC from Nurse
M = Improve services
N = Equiping

* α=0.05, 1-β=0.80, two tailed test
** α=0.10, 1-β=0.80, two tailed test

IV. RESEARCH STUDY DESIGN

There are two main reasons for conducting a survey:

1. To provide a baseline evaluation against which the effectiveness of an intervention can be assessed by comparing follow-up to baseline rates, and

2. To determine the magnitude of problems of interest and of risk factors associated with the problems <u>that are amenable to pragmatic intervention</u>.

a. **Design Choice [check with NLS]:** Hospital records and clinic data provide an indication that certain problems have been observed in the self-selected people who present at places offering health care. The validity of this data increases directly with the number of cases seen and the number of clinics and hospitals observing a given problem. Hospital and clinic data do not, however, generally represent problems as they exist in the population. This is particularly true for Cochabamba where low utilization of formal health services was encountered in the qualitative survey. It is also not simple to predict whether hospital or clinic data over- or under-represent potential health problems in the community. Usually, most people attending a hospital or clinic do so because they are ill; still, hospital and clinic patients often represent those who are economically better off (and possibly healthier) than the remainder of society.

The lack of hospital and clinic observation of a problem also does not preclude it's existence, but may depend on the condition's rapidity of progression and it's case-fatality rate. Conditions which are rapidly fatal are likely to be missed in hospital or clinic records and, unless the condition is fairly prevalent, by this method.

For this reason, the collaborative group that developed and revised the design for evaluating the effects of the MotherCare project in Cochabamba decided to monitor the clinical and hospital data only to revise the production indices and observe

behavior change in formal services in birth care and accessibility of equipment donated by the project.

Population based surveys can provide a representative picture of the existence and magnitude of health problems in the area of interest. Prior to conducting a population based survey, available data has been reviewed and, with the collaborative group, it was determined that next year's census will provide stronger estimates of maternal, infant and neonatal mortality than the Cochabamba sample would permit. Thus, this study does not attempt to estimate these rates with any precision, but rather will collect data on maternal, infant and neonatal mortality to describe the causes of these deaths.

The data from the qualitative study help in making decisions with regard to the problems that will be included in or excluded from the evaluation, what the research population will be, sampling considerations and the necessary sampling size.

Since it was the best, and perhaps the only valid and representative means of evaluating MotherCare's work in Cochabamba, we chose a population based study to investigate the intervention achievements. Additionally, since a large part of the interventions will be through IEC covering the urban/peri-urban universe of Cochabamba (including mass media communications), we chose a pre-post method. There will be no controls (aside from baseline), due to the lack of comparable populations in the same geographic area that were exposed to the project interventions. Due to the high additional cost to the evaluation and the low possibility of finding adequately similar population, we decided not to look for other geographic areas for a control population.

b. Manner of establishing study objectives

One goal of the MotherCare Cochabamba project is:

"...to increase the awareness and utilization of all reproductive health services...".

The objectives of this goal can be stated in an explicit manner which permits evaluation. The objectives of this goal could be:

1. To increase women's awareness of the provision of preventive obstetric services available from (place 1, place 2, etc.) from 10% at baseline to 25% two years post baseline.

2. To increase the percent of women hearing radio messages about the availability and utilization of clean birth kits from 0% at baseline (when there were no radio messages) to 50% two years post baseline.

3. To increase the proportion of women recognizing clean birth kits from 5% at baseline to 25% two years post baseline.

4. To increase the proportion of women utilizing clean birth kits from 1% at baseline to 10% two years post baseline.

Questions 2, 3, and 4 allows the investigator to evaluate how radio messages have impacted on the recognition and utilization of clean birth kits because they allow assessment of who did and did not receive the intervention (radio messages), whether there was greater recognition of clean births kits in those who heard the radio messages than those who didn't, and, if so, whether this greater recognition led to increased utilization of the kits. The ability to assess this continuum is maximized by selecting key project objectives and stating them in quantifiable and time limited terms.

Research objectives have been specified by a group of individuals, representing the MotherCare project director, epidemiologic and IEC consultants, CIAES, the Unidad Sanitaria, Faculty of Medicine, DIEMED and NGOs. Group consensus (or majority rule) was beneficial to the selection of research objectives because it helped to discriminate between objectives that are interesting, but unnecessary vs. those that are essential.

C. Creation of the Questionnaire

Well developed questionnaires have the following attributes: question clarity, simplicity and lack of ambiguity, short questionnaire length, a good layout with a clear flow from question to question, appropriate items and codes essential for data analysis, and easy-to-follow instructions that are distinguishable from the questions themselves.

1. Defined by Research Objectives

The purpose of data collection should always be clearly defined. Information collected should relate directly to project objectives, that is to planning, managing or evaluating your project. Data collection should be simple. Therefore, the collaborative group developed dummy tables (above) to make sure the questions and codes will provide the information necessary for the project cross-sectional and pre-post assessments.

To avoid the common error in questionnaire development of beginning simply by writing questions, we created **"Skeleton Tables"**, to identify the information required for the cross-sectional and pre-post project analyses **should dictate the items for inclusion in the questionnaires**, and even then only the most pragmatic and useful items, and a **few** essential descriptive variables (such as age) were be included in the questionnaires.

To avoid another common error of re-inventing the wheel in questionnaire development, we used questionnaires that have previously been developed, pretested, modified, refined, standardized and utilized by various institutions (including DHS, NCHS/HANES, and INCAP) with expertise in this field. Only after did we review and modify the wording of the questionnaires based on findings in the cualitative study. Appendix 1 includes the preliminary (before pretesting) interviews for data collection.

Due to the purpose (quantifying) and size of the interview, the questions are closed-ended (pre-coded). Additionally, colsed-ended questions have the advantages of data precision and uniformity.

Clear instructions to interviewers, distinguishable from the questions on a questionnaire, appear within parentheses in UPPER CASE lettering. Instructions only exist because they are important, therefore it is important they are readily available and used consistently. Instructions integrated in the questionnaire are consistently used and do not require taking time out to look them up in a separate guide.

Similarly, skip sequences are easily identifiable by appearing within parentheses with an arrow indicating "skip to" (→question number here). Skip sequences referred to in this manner are easier to follow and reduce questionnaire bulkiness compared to written instructions regarding skipping.

Probes, that is statements that should be read only if a respondent apparently does not understand a question, should appear in parentheses in lower case letters. Questions should appear without parentheses, always in lower case letters.

SAMPLE STANDARD INTRODUCTION

Good (morning/afternoon/evening). My name is (INSERT YOUR NAME HERE) and I am working with CIAES. We are conducting a survey of women's and childrens health in the urban area of Cochabamba. The information from the survey will be used to help us plan health care services which we hope will improve the health of women and children in the area. We are asking women who are pregnant now or were pregnant last year if they will participate in this survey by allowing us to interview them. Does a woman between the ages of 15 and 45 currently live here? ("NO" →END) What is her name? (WRITE HER NAME HERE _____) Is (INSERT WOMAN'S NAME HERE) pregnant now or was she pregnant last year? ("NO" →END) May I speak with her? Thank you.

(START THE INTERVIEW).

d. Pretesting: Rationale - Validity, Utility

After a draft questionnaire is developed, it should be pretested with respondents similar to those in the survey. To do this we have calculatee the study sample size and selected study sites to avoid their inclusion in the pretest areas (see next section).

A pretest is actually a small scale feasibility test to determine whether questions are difficult to understand and thus misinterpreted, too sensitive as phrased and thus objectionable, whether a questionnaire is too long (or long-winded) and thus provokes distracted responses (which can be seen in too many answers in any single code category: "yes", "no" or "don't know") towards the end of the questionnaire. Pretests also provide useful information on the clarity of the instruments instructions and where and why interviewers are having problems with either the interviewing or the recording of responses. Pretests should be conducted on 25-30 people. With this knowledge, the questionnaire, survey and coding instructions can be modified to be easy to use, clear, unprovocative, and reasonably short. If the order or meaning of questions are changed, an additional pretest of 10 people using the second draft instrument is recommended prior to questionnaire finalization and reproduction.

Once the questionnaire and standard presentation have been pretested, the results of the pretest should be discussed with and the modified questionnaire and informed consent forms should be reviewed by the research specialist before reproducing them for the baseline survey.

3. Sampling Strategy:

All surveys must balance considerations of sample representativeness, logistics and available resources. Probability sampling is a field in it's own right, and is based on achieving a known chance of selection for all individuals. Random samples are probability samples that select sample units so that each unit has a fixed probability of selection.

Simple random sampling indicates that all individuals have an equal chance of selection. The attribute of equal probability of selection is attained by listing all individuals in the population of interest, excluding those meeting the criteria that define the target population, numbering the remaining individuals in ascending order, and using a random numbers table to select the number of individuals required to obtain the necessary sample size (increased to compensate for non-response, loss to follow-up, and design effect).

While simple random sampling, which selects individuals randomly from a population, seems superficially the simplest way of choosing a sample, in fact cluster sampling is often the most

pragmatic form of choosing the study (or evaluation) sample. To easily choose individuals at random requires complete lists of all individuals in the population of interest with adequate data to exclude those falling outside the definition of the target population. Obviously, such lists are rare, which makes cluster sampling, that is choosing groups of people (like all those who live on one block or in one village), simpler and more pragmatic than simple random sampling.

Equally, choosing and interviewing larger clusters of people (such as those aggregated by block, village, etc.) is logistically easier (and less time consuming and expensive) than choosing smaller aggregates (like household or extended family compound), although sampling fewer larger clusters provides a less representative sample than choosing individuals or small clusters by standard random selection procedures. Increasing the total sample size by a reasonable amount (25%-30%) will usually compensate for the loss of representativeness associated with cluster sampling (also called the design effect) provided that the total number of clusters sampled is adequate for the survey's purposes.

In Bolivia, the selection of the sample will be conducted in cludster to maintain a reasonable cost of the baseline survey and pre-post evaluation, while being logistically practical and obtaining an adequately representative sample.

The selection of the sample is conducted as follows:

Step 1. Obtain maps of all the blocks for each census sector, number the blocks and multiply by 4% of the total population (estimated to be the % of women pregnant in any given year) in the area of interest (periurban areas of Cochabamba) and exclude the areas not of interest (i.e. blocks in high socioeconomic strata neighborhoods, categorized "C").

Step 2. Estimate the % of the population of interest (all in categories "A" and "B") for each census sector to choose the same % of the sample from the sector. (Proportional representation of 17 sectors).

Step #3. <u>Muestra de grupos</u>: Cluster sampling (the sampling unit is the manzano, selected with proportional representation for each sector). Using the maps attached, and numbering all the manzanos (except for the excluded sectors) the project area consists of:

A SECTOR	B POP X 4%	C # BLOCKS	D B / C	E B / 11,064	F E X 2,250	G F / D
010	400	212	1.89	3.62	81	43
020+ 021	2,202	513	4.29	19.90	448	104
030	617	577	1.07	5.58	126	118
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290	664	184	3.61	6.00	135	37
300	104	119	0.87	0.94	2	2
TOTAL	11,064			100.02%		

A = Total Pop. x 4% = number of women between the ages 15 and 45 who are pregnant now or were pregnant within the past year
B = Number of blocks per sector
C = % of the female population between the ages of 15 and 45 who are currently pregnant or were pregnant within the past year living in each block of the sector
D = % of the total population eligible for sampling (women between the ages of 15 and 45 who are currently pregnant or were pregnant within the last year) living in that sector
E = Number of women that should be interviewed (presupposing that half of that number will be pregnant women, and the other half women who wee pregnant within the past year)
F = Estimate of number of blocks per sector in the sample.

The average block size can be calculated from the total population of the area (based on the latest population data available) although this will be somewhat under-estimated. The average number of women per block that are currently pregnant or were pregnant within the past year can be calculated by multiplying the total population of the area by 4% (the calculated average of the female population between the ages of 15 and 45 years who are currently pregnant and the equivalent number of women who were pregnant within the past year in an average block).

In this fashion, we constructed a list of numbers from the table of random numbers in standard fashion for a sampling of blocks in each sector (with a 10% increase in the total number estimated for each sector to ensure finding the required number of women for the sample). This list and the map of chosen blocks are in Appendix 2. Care should be taken in organizing the visiting and interviewing order for these blocks, in case there are more women per block and the sample requires fewer blocks.

Moreover, we exluded Block 300 from the sample due to the low number of eligible women for the sample (2) and for these women not being representative of the total population of women for that sector.

APPENDIX 2: LIST OF CHOSEN BLOCKS BY SECTOR IN ORDER OF SELECTION

010:→ 060 071 113 063 183 155 042 164 211 ...
...→ 152 072 189 147 092 101 002 167 198 ...
...→ 186 058 124 062 166 012 083 076 153 ...
...→ 130 181 065 136 106 129 108 056 091 ...
...→ 146 043 011 204 078 138 003 102 119 ...
...→ 070 033 015 122 117 017 154 016 121

020 (52% of 020+021 sample): Read →

046	133	266	206	048	195	205	038	134	222
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081	147	239	101	033	164	053	252	202	037
208	167	015	115	001	055	112	242	218	103
175	086	235	179	074	234	143	181	042	225
212	224	060	211	233	113	126	247	141	

021 (485 OF 020=021 sample): Read →

084	104	050	203	191	208	025	131	002	017
036	199	072	097	243	147	095	117	008	026
080	167	246	102	058	096	179	039	090	040
013	048	109	154	168	033	006	014	042	073
030	038	007	115	119	188	192	094	241	015
100	122	024	105	158	190	005	016	099	123

030→

450	051	127	055	328	181	166	242	357	071
367	014	335	108	304	056	068	294	495	460
031	432	568	541	552	448	077	243	250	362
150	501	240	006	313	257	484	189	457	310
481	195	324	130	162	303	188	293	555	284
204	042	374	573	251	356	397	191	537	269
327	523	442	161	046	491	396	426	175	376
192	105	081	384	094	158	463	037	230	370
452	575	137	292	059	401	097	416	453	364
088	128	141	048	025	065	079	387	435	270
474	317	520	015	176	099	405	089	559	264
227	423	489	345	027	550	186	315	062	331
024	440	249	126	393	217	425	040	013	510
084	268	400	497	511	267	557	556	385	408

040→

1	51	26	61	69	4	118	102	88	49	
65	83	23	21	106	54	40	29	15	57	
100	90	37	38	98	117	68	115	101	71	
67	22	18	55	33	41	17	5	43	44	109

050→

APPENDIX 2

Mother's Interview: Interviewer's Manual

APPENDIX 2.

MOTHER'S INTERVIEW: Interviewer's Manual

by

Ernesto Pinto R.
modified for CIAEs

I. Introduction

The mother's interview is an investigation conducted by CIAEs among mothers who are currently pregnant or have been within the twelve months preceding the MotherCare quantitative study in Cochabamba. This is to obtain information regarding general characteristics, pregnancy and birth histories, regarding children who have died, and those children surviving, and about the maternal health care, family planning and contraceptive methods.

15-20 interviewers will be trained to gather this information.

The training period (5 days) will be both theoretical and practical, to efficiently prepare staff for the collection of data.

During this period, you will listen to talks on how to conduct these interviews and how to correctly note the information obtained in the questionnaire. You will also conduct interviews with other participants in the course. Tests for determining awareness will be conducted, and the questionnaires you complete will be reviewed for correctness and veracity. The fundamental objective is the training of personnel to take down complete and truthful information according to the ideas and applied norms in homogenous form.

This manual will serve as study material and a document to consult, so you should read it carefully and familiarize yourself with its contents to facilitize the training.

Once this section has been completed, we can proceed to the selection of 15 people as interviewers. These interviewers will collaborate under the direct supervision of three supervisors.

II. Study Objectives:

This investigation has the fundamental goal of gathering useful and appropriate information to provide sound tools for the study directors to define the study group. In that manner, they will be able to analyze and deliver the most correct study results.

III. The Study Universe

In this survey, approximately 2,250 mothers will be interviewed. This includes all women in the selected study sectors who are currently pregnant (approx. 1,125), all women who were pregnant

within the past 12 months preceding this study (approx 1,125) and some family member of those women who died during childbirth while pregnant during the 12 months preceding this study (approx. 100).

IV. Survey Organization:

The staff for data collection will be recruited, trained and chosen from the _____ personnel.

The interviewers' work will be organized and overseen by 3 supervisors who will be responsible for the organization and respective work.

Each day, the interviewer will receive the questionnaires, with the identification of the mothers to be interviewed from the supervisor. The primary responsibility of the interviewer is to find the mother in the houses on the block chosen for the study and conduct the questionnaire according to the guidelines established in training. The completed questionnaire should be returned immediately to the supervisor to be reviewed and registered.

V. Useful Concepts

To complete your work, you should understand and keep in mind several basic concepts.

PREGNANT MOTHER: To be completed by FG? **(CHECK WITH NLS - "FG llenar)**

MOTHER WHO FINISHED A PREGNANCY DURING THE LAST TWELVE MONTHS: This includes a live birth, a stillborn, and natural or induced abortions between the dates of _____ and _____.

MOTHER WHO DIED BECAUSE OF PREGNANCY DURING THE LAST 12 MONTHS: To be completed by FG

VISITOR: Person not normally living in the house .

MOTHER BETWEEN THE AGES OF 15 AND 45: This means date of birth must be between the dates _____ and _____.

VI. Role of the Interviewer

The interviewer occupies the central position during the survey, since he/she is the person compiling the information of the interviewees. For that reason, the success of the survey depends on the quality of the work of <u>each</u> interviewer. This means that you cannot offer advice or opinions regarding anything to the interviewee, since this could bias the information. Also, the

presence of another person during the time of the interview could bias the information.

In general, the responsibilities of the interviewer in the survey are the following:

- Locate the blocks that have been selected for the study, conduct the interview in as much privacy as possible, and return the completed questionnaire to the supervisor.

- Read the questions exactly as they are written and in the same tone of voice for all interviews.

- Review the completed interview to make sure that all the questions were asked and the answers noted carefully and in legible form.

- Return to those houses to interview the mothers that were not contacted during the initial visits.

These tasks will be described in greater detail throughout the course of this manual and during your training.

VII. Training of Interviewers

Despite the fact that some people are more apt for interviewing than others, someone can become a good interviewer through experience. Your training will consist, in large part, of practice sessions. Before each training session, you should study the manual carefully, along with the questionnaire, noting any questions you might have. Think of questions that could help you avoid mistakes at any time during the real interviewers.

During the training course, you will see and hear <u>demonstration interviews</u> conducted in the class by two people being trained, as an example of the interviewing process. During this phase of the training, the questionnaire sections, as well as the questions and instructions will be discussed in detail. You will also be given a homework assignment, which will help you practice. Reading the questionaire aloud in front of other people, will help you feel comfortable asking these questions out loud. This is a very important assignment in preparation for your work as an interviewer.

The next phase of training will be the <u>role that you play</u> in practicing interviewing another person who is being trained. One person will play the role of interviewer, and the other will answer the questions.

Tests will be administered to determine your progress during your formal training period. These will serve to test your familiarity and comprehension of the questionnaire and the survey

process. The interviewers will be chosen at the end of the training course, on the basis of the work and preparation of each candidate.

Your training as interviewer does not end when the formal training period has ended. Each time the supervisor meets with you to discuss your work is part of your training process, and reinforces what you have learned.

The formal training period only acquaints you with the basic information regarding the survey, the questionnaires, etc. Observation and supervision during the data collection complete the training process. This is particularly important during the first days of work. Again, when you confront situations that were not covered during the training, it would be helpful to look for the answer or ask your supervisor.

VIII. Interviewer Supervision

As explained earlier, training is a continuous process that doesn't end with the formal classroom sessions. The observations and supervision once the data collection has begun are part of the training and data collection processes. The supervisor plays a very important role in the continuation of your training and in assuring the quality of survey data. The functions of the supervisor include:

- Observe some of your interviews to ensure that you are conducting them correctly: that you are asking the questions as they are written and recording the responses correctly; in other words, make sure that you are not biasing the information;

- Spot reviews of some interviews to ensure that you are interviewing the mother correctly;

- Meeting with the team (interviewers and supervisors) daily to comment on the unfolding work and give future work assignments;

- Help solve any problems you might have finding the mothers you were assigned, in understanding the concepts of the questionnaires, and encountering reluctant mothers.

The supervisor, with the prior knowledge and approval of the study principal investigator, can also relieve any interviewer of his/her duties when he/she is not collecting the data at the level required for the study to be successful.

IX. Conducting the Interview

Successful interviewing should not be considered just a mechanical process. Each interview is a new source of

information, and should therefore be conducted in an interesting and pleasing manner. The art of interviewing develops with practice, but there are certaing basic principles the interviewer should follow.

In this section, you will learn a number of general guidelines about establishing repoire with the interviewee, and conducting a successful interview. The following sections provide more detailed instructions on how to use the survey questionnaire.

9.1. Establishing repoire with the interviewee.

The interviewer and interviewee don't know each other, and one of the principal tasks of the interviewer is establishing a connection. Her first impression of you will influence her desire to cooperate with the survey. Be sure that your appearance is neat, and your mannerisms friendly when you show up to interview her.

1. Make a good impression

When you first meet the interviewee, make every effort to make her feel comfortable. A few well-chosen words can put her in the correct frame of mind for the interview. Begin the interview with a smile and a greeting such as "Good afternoon," and then proceed with your introduction.

A good introduction could be:

"My name is _____. I work for _____, and we are conducting a survey on maternal health, and need to interview pregnant mothers or recent mothers here. I would like to talk with you and ask you some questions."

2. Always maintain a positive outlook.

Never adopt an apologetic tone, and DON'T say things such as "Are you too tired or busy?" "Would you give me a few minutes of your time?" or "Would you mind answering a few questions?" Such phrases invite rejection before the interview even begins. Instead, it would be better to say "I would like to ask you a few questions," or "I would like to speak with you for a few minutes."

3. Stress the confidentiality of the answers when necessary.

If the interviewee is doubtful about responding to the interview or asks how this information is going to be used, explain that the information you are gathering will be treated with confidentiality, that no individual's name will be used for any reason, and that all this information will be integrated into numeric reports. Nor should you mention any other interviews or

show completed questionnaires to other interviewers or the supervisor in front of the interviewee or any other person.

4. Answer frankly any question the interviewee asks you.

Before accepting to be interviewed, the potential interviewee might ask questions concerning the survey or how she was chosen to be interviewed. Be direct and friendly when answering.

The interviewee might also be worried about the duration of the interviewer. If she asks regarding this, tell her that the interview generally takes between __ and __ minutes. Indicate your willingness to return at another time only if it is inconvenient for her to answer the questions right then.

9.2 Suggestions in conducting the interview.

1. BE NATURAL throughout the course of the interview.

The majority of these people are educated and will tend to give answers they think you want to hear. It is therefore very important that you remain completely natural when asking the questions. Your face or tone of voice should never give the impression to the interviewee that she has answered a question "correctly" or "incorrectly." You should never appear to approve or disapprove of any of the answers given by the interviewee.

If the interviewee gives an ambiguous response, try to probe in a neutral manner, asking something like:

"Could you explain a little more?"

"I didn't understand, could you repeat that answer please?"

"There's no hurry. Take a minute to think about it."

2. NEVER SUGGEST RESPONSES to those you are interviewing.

If any response of the interviewee is irrelevant to the question, don't rush her by saying such things as "You probably meant to say . . . Right?" In many cases she will be in agreement with your interpretation of her answer, when in reality, it is not what she meant to say. Instead of that, you should probe in such a way that the interviewee herself gives the correct response.

3. DON'T CHANGE THE ORDER OR PHRASING of the questions.

The phrasing of the questions and their sequence in the questionnaire should be maintained because they follow an established objectives. If the interviewee should misunderstand the question, you should repeat the question slowly and clearly. If she still does not understand, you may use other words, only

those that are within parentheses, taking care not to alter the probe and the meaning of the original question. Provide only the minimum information necessary to obtain the approriate response. If the mother who is responding feels more comfortable speaking in Quechua, you should use the "quid Quechua" [Quechua translation of the questionnaire] and read it exactly as it is written, writing the answers on the Spanish questionnaire.

4. DON'T RUSH the interview.

Ask the questions slowly to ensure that the interfiewee understands and knows what she is being asked. Remember that the interviewee is not familiar with the topic and the questions you are asking. After asking a question, pause and give her necessary time to think. If the interviewee feels pressured or cannot formulate her own opinion, she could answer "I don't know" or give a vague answer. If you feel the interviewee is answering without thinking just to rush the interview, tell her "Try not to rush. Your opinion is very important, so I'm asking you to consider your answers carefully."

X. Procedures in the collection of data.

The study work will be carried out in conformity with an established timeline, and the survey will be successful only if each member of the interviewing team understands and correctly follows the established procedures for the work.

10.1 Preparation activities

1. Work assignments.

The supervisor will give you a daily work "assignment" to complete.

Make sure that:

- You have sufficient materials to locate the mother;

- You understand any special instructions from the supervisor regarding contacting the mothers you are going to interview.

2. Obtaining the required supplies for the survey.

Before leaving to conduct the survey, you should make sure that you have the necessary supplies for your work. These include"

- questionnaires
- pens, pencils, erasers

3. Problems locating the mothers.

Due to the fact that people work and have other responsibilities, you might have some problems locating mothers. Following are some examples of problems that you may find and how to solve them:

The interviewer is incapable unable to find the mother

- The mother is inaccessible:

Some mothers may be busy and cannot give the interview right then; the inteviewer should put the questionnaire away for later. Another attempt should be made to contact the mother at a later time when she will be able to respond. The Supevisor should be informed immediately of any difficulties in locating the mother to be interviewed.

- The mother is not at home"

The interviewer will have tried to find the mother. If she is unsuccessful, the Supervisor should be informed to make the most appropriate decision. If the interviewer cannot complete the interview during the initial visit, he/she should inform the supervisor and continue making visits.

- The women who are potential respondents refuse to be interviewed.

The availability and desire of the women to be interviewed depends to a large degree on the initial impression that you make upon meeting her. Introduce yourself, explain the purpose of your visit and tell her that the interview will only take a short period of time. If necessary, tell her and stress that the information is confidential. If the person continues to not want to be interviewed, it could be because right then is inconvenient for her. Ask her if another time would be more convenient, and make an appointment. If she still refuses to be interviewed, note that detail in the observation space* and immediately inform the supervisor who originally obtained the permission of the mother to participate in the study, so that she can be re-motivated and accept to be interviewed.

- Incomplete interview.

The responding mother might receive a call during the interview or might not want to answer all the questions at the time of your visit. If any interview is incomplete (highly unlikely) for whatever reason, you should inform the supervisor and attempt to arrange a date to see the interviewee again as soon as possible to obtain the information that is lacking.

10.2 Review of incomplete questionnaires

It is the responsibility of the interviewer to review each questionnaire at the end of the interview. This review should be done before leaving the woman, to make sure all the appropriate questions have been asked, that all the answers are clear and reasonable and that your writing is legible. Also make sure that you have correctly followed the instructions regarding skip patterns. Any error should be clarified by the woman who is responding. Apologize, explain that you wish to clarify anything that you did not record it correctly and ask the question again.

Don't recopy the questionnaires. As long as the answers are clear and legible, it is not necessary that the questionnaire itself be that neat. Each time you copy the answers to a new questionnaire, you increase the possibility of making a mistake.

10.3 General procedures for completing the Questionnaire

To effectively gather the necessary information for the survey, you should understand how to ask each item, what information you are trying to gather with the question and how to manage any problems you may encounter during the interview. You should also know how to correctly record the answers given by the interviewee, and how to follow the special questionnaire instructions. This part of the training manual is designed for you to familiarize yourself with the survey questionnaire. Along with studying this material, you will have the opportunity to role-play in interviews during the training course and conduct varioius practice interviews with your classmates.

10.4 Asking the questions

It is very important that you ask the question exactly as it is written in the questionnaire. (If the answering mother is more comfortable responding in Quechua, you should use the guide in Quechua, and record the answers on the Spanish form.) When you ask a question, be sure to speak **slowly** and **clearly** so that the person you are interviewing has no difficulty in hearing or understanding the question. Sometimes you will need to repeat the question to make sure that the interviewee understood. In these cases, do not paraphrase the question, but repeat it exactly in the manner that it is written.

If the interviewee still does not understand the question even after you have repeated it, you will have to reconstruct it, using the words in parenthesis. Take care not to change the phrasing so that the original meaning is not changed.

In some cases, you will have to probe (eg. ask additional questions) to obtain an answer from the interviewee. If this occurs, you should take care that your probes are "neutral" and that they do not suggest an answer to the interviewee. Probing for something (giving an example) requires a certain tact and

ability, and will be one of the primary challenges during your work as interviewer. You may read all the pre-coded answers to help the mother reach an answer.

10.5 Recording the answers

In the survey, all the questionnaires should be completed in blue ink. There are two types of questions on the questionnaire: (a) pre-coded answers, and (2) "Other: specify _____" answers.

1. Pre-coded answers

This means that for every question, the possible answers have an assigned number in code. To record the answer, you should just circle the number that corresponds to the answer.

Example: QUESTION 5: Are you currently pregnant?

Yes	.....	1
No	.....	2
Don't know	.....	3

If the answer is YES, you should circle number 1

2. Recording "Other" answers

Sometimes, even though the questions are pre-coded, you will need to write the answer that the respondent gives in her own words. This occurs in cases where the answer given does not correspond to the pre-coded choices. In these cases, you should mark the choice **Other** and specify the answer given in the space. Attempt to record these answers exactly as they were given; it you need to abbreviate the description to fit it within the given space, take care to maintain the exact meaning, and, if necessary, write a note at the end or at one side of the paper to better explain.

3. Skip patterns or Jump to . . .

In general, the skips are indicated with arrows and appear to the right of the corrresponding code. For example, with question 11a, when the interviewee responds "NO" to the question, you should circle the appropriate code and follow the arrow; in other words, skip to question 12 and not ask question 11b.

4. Other important recommendations

- The words in upper case throughout the questionnaire are instructions for the interviewer, and should NOT be read aloud. You should take them into account and follow them.

- The words in lower case SHOULD be read aloud by the interviewer, since, aside from questions, they may be phrases introducing the topics that are going to be addressed.

- You GENERALLY SHOULD NOT read the choices, but wait for the interviewee to respond and record it. You should only read the choices when a specific note indicates that in the questionnaire.

- For the majority of the questions, all the possible answers are pre-coded. If the answer does not fit any of the pre-coded choices, circle the number corrresponding to "other" and specify the answer in the words of the interviewee. If the interviewee's answer is very long, you should condense the principal idea of it.

- The category "no answer" is generally coded as 9 or 99 as the case may be.

- The category "not applicable" is generally coded by the computer (to 8 or 98).

10.6 Correcting mistakes

It is important that you record al the answers clearly. For pre-coded answers, make sure to circle the appropriate answer, correctly and carefully. For the "Other" answers, the response should be written so that it can be easily read. If you made a mistake in recording the interviewee's answer or if she changes her response, make sure that you mark out the incorrect answer and write in the correct one. Just put two horizontal lines through the incorrect answer. Remember that if there are two answers shown for any question, later it won't be possible to determine which is correct when the data are processed.

XI. Filling out the questionnaires

Introduction to the questionnaires:

A questionnaire has been designed for the study.

In this manual there are instructions about how to fill out some questions. All the questions will be reviewed during the course of training. The standards reviewed earlier hold true for the two primary interviews and other interviews.

11.1 Questionnaire Instructions

Fernando: You should have question-by-question instructions here. Since the questionnaire for women who have been pregnant at some time during the past year has all the questions, use that form when writing the explanations.

A. Mother's Identification

This is found in the first section (Q.1 to Q.9b) of this questionnaire. The supervisor will complete items 1 to 4 before passing out the forms to the interviewer, and will complete the identification number on the first line of each page of every form (in case the pages are separated by accident).

REMEMBER THAT AS A GENERAL RULE, IF THERE IS NO SPECIAL INSTRUCTION OR ARROW ON THE QUESTIONNAIRE, YOU SHOULD CONTINUE WITH THE QUESTION IMMEDIATELY FOLLOWING THE ONE YOU HAVE JUST ASKED.

Q.9a. The date of birth establishes the age of the interviewee. Record the day, month and year in numbers (January = 01,....., December = 12). If the woman doesn't remember the date, ask for her cedula and copy the date of birth. If this is not available, record 99 for day, month and year, and ask Q.9b.

If the interviewee doesn't know how old she is, **PROBE** until you find the information. The mother's age is a very important variable for this study. This variable is closely related to the act of conception and with fertility in general.

Fernando: this needs to be modified, but it is an example of Ecuador that might help you.

Examples of probes to establish age:

- How old were you when the Peruvians invaded (1941)?

- Were you born before the earthquake in Ambato (1949), and how old were you?

- How old were you when man first reached the moon (1969)

- How old were you when the Pope came to Ecuador (1985)

- How old were you when you had your first child, and how old is (s)he?

- How old were you when you were married/in a relationship for the first time, and how many years have you been married/in a relationship?

<u>Give the interviewee time to answer, above all in cases of older women and those with large families.</u>

B. Characteristics and Information from the Mother

The interviewer is responsible for completing the rest of the questionnaire. The section consists of approximately ___

questions (Q.10a. to Q.56). Before beginning to detail some of the questions, it is important that you have the following:

Q.10a. ...

APPENDIX 3

Budget, Justification and Timeline for Baseline Study

APPENDIX 3. Budget, Justification and Time for Baseline Study (Spanish)

PRESUPUESTO:

A.- SUELDOS:

1 Investigador principal	$us 800 mes por 5.5 meses.....	4400.-
1 Investigador auxiliar	$us 600 mes por 5.5 meses.....	3300.-
4 Asesores (de otras instituciones)	$us 400 mes por 5.5 meses.....	2200.-
2 Supervisores de campo	$us 700 mes por 3 meses.....	2100.-
1 Técnico en computación	$us 800 mes por 1 més	800.-
15 Encuestadores	$us 2250 mes por 1.5 meses....	3375.-
3 Secretarias para introducción de datos	$us 450 mes por 2 meses	900.-
1 secretaria permanente	$us 150 mes por 5.5 meses.....	825.-
	SUBTOTAL	**17900.-**

B.- GASTOS OPERATIVOS:

Fotocopias	1300.-
Material de computación	300.-
Material de escritorio	300.-
Alquiler local de capacitación y reuniones	150.-
Alquiler de 3 computadoras por dos meses	1500.-
Transporte para 20 personas	850.-
Gastos de comunicación	300.-
SUBTOTAL.....	**4700.-**

C.- GASTOS ADMINISTRATIVOS C.I.A.E.S. 2260.-

TOTAL 24860.-

(Veinticuatro milochocientos sesenta 00/100 Dolares Americanos)

JUSTIFICACION.-

A.- Sueldos.- C.I.A.E.S., como responsable de la ejecución del estudio cuantitativo, designará a dos investigadores de su Staff por el tiempo que dure el trabajo (cinco meses y medio), el investigador principal y el investigador auxiliar serán los encargados de la operativización y supervisión general del estudio,seleccionarán y capacitarán a los encuestadores , supervisarán en forma alternativa a 1 grupo de 5 entrevistadores durante el trabajo de campo.
Controlarán la adecuada introducción de datos en el sistema informático, resolverán los problemas que se presentarán durante la ejecución del mismo en forma conjunta con su equipo asesor, informarán quincenalmente al directorio de C.I.A.E.S. y a MOTHER CARE acerca de los avances del estudio, informarán también acerca de los aspectos económicos y gastos inherentes al mismo, dirigirán al equipo asesor para la elaboración y análisis de los cuadros preliminares, trabajarán con los asesores que envie MOTHER CARE para la elaboración del informe final, elaborarán y redactarán el informe final de la investigación,. Todas estas acciones ejecutarán en estrecha coordinación con el coordinador del Proyecto en Cochabamba. La ejecución de estas actividades demandarán por lo menos la utilización de 6 horas por dia de cada uno de los investigadores.

El grupo ASESOR estará constituido por los representantes de las instituciones que deseamos involucrar en el estudio: La Unidad Sanitaria de Cochabamba, el Departamento de Medicina Social de la Universidad, el Departamento de investigaciones médicas de la Universidad y el representante de la Asociación de Organismos no Gubernamentales. El equipo asesor se reunirá con los investigadores de C.I.A.E.S. cada 15 dias a objeto de recibir información acerca de la marcha del proyecto y para colaborar en la solución de problemas que se presentaren durante el trabajo, las reuniones tendrán duración aproximada de dos horas y por el trabajo de asesoria se les pagará a cada uno la suma de 100 dólares Americanos por cada mes que dure el estudio.

Se dividirá al equipo de encuestadores en grupos de cinco, de esta manera se formarán tres grupos .A cada uno de los cuales se les asignará un supervisor, como uno de los grupos estará a cargo de los investigadores de C.I.A.E.S., se contratarán a dos supervisores, cada uno de los cuales recibirá como pago la suma de $us 350.- mensual durante tres meses que es el tiempo que se calcula durará el trabajo de campo y la entrega de las encuestas revisadas por los supervisores. La supervisión debe asignarse desde el inicio del trabajo dado que ellos participarán de las sesiones de capacitación y organización.

Es necesaria la presencia de un Técnico Informático una véz que se haya concluido la introducción de los datos, el trabajo de este profesional estará dirigido a la limpieza de los dàtos, la búsqueda de los datos no consistentes y la elaboración de las tablas

preliminares bajo la dirección de los investigadores.

Se calcula que el trabajo de los entrevistadores en el campo, durará 6 semanas, sin contar el tiempo que estarán capacitandose, se pagará a los encuestadores, la suma de $us. 150 por mes de trabajo (Las encuestas ocupan un mes y medio del cronograma).

Para introducir 2250 encuestas, a razón de 4 encuestas por hora, se necesitarían 93.75 dias; si tres personas se ocupan simultaneamente de este trabajo demandará de cada una de ellas el empleo de casi 32 dias, es conveniente por tanto contratar este personal por lo menos para dos meses de trabajo, puesto que bajo la dirección del Técnico en Informática colaborarán en la revisión y limpieza de los datos durante las dos semanas que dure este proceso.

El apoyo permanente de secretaría a las actividades del proyecto ha sido contemplado en el presupuesto, por el tiempo que dure el el estudio, este personal se ocupará exclusivamente de las actividades relacionadas al estudio.

B.- GASTOS OPERATIVOS:

Se fotocopiarán 2500 entrevistas de 14 hojas cada una, lo que hace un totál de 35000 fotocopias, para este fín se han presupuestado $us 1000.- . Otros $us 300 servirán para hacer las copias de los informes, resultados preliminares, material de instrucción y otras que demanden las actividades.

El material de computación, comprende la compra de diskettes, formulario continuo y cinta para tres computadoras.

En los gastos de escritorio se han considerado los materiales que se distribuirán a los entrevistadores, tales como lápices, borradores, bloques de papél , tajadores, Etc. Ademas de la papeleria y material de oficina.

Va a ser necesario alquilar local para las sesiones de capacitación y reuniones con el equipo encuestadór.

Cotizaciones iniciales indican que el alquiler de cada computadora cuesta $us 250 por més, será necesario trabajár con ellas durante por lo menos dos meses en la introducción de los datos. Para acortár eltiempo de trabajo en esta etapa se necesitarán 3 computadores trabajando simultaneamente, la fase de análisis, puede realizarse con el equipo de C.I.A.E.S..

Para el desplazamiento de 20 personas, entre entrevistadores y supervisores a las areas se ha asignado el monto de $us 1.42 por dia, por persona y por los 30 dias del trabajo en el terreno, lo que hace un total en este item de $us 850.-

Va a ser necesario tener comunicación fluida tanto con con las

otras instituciones que participan del estudio , como con las oficinas de MOTHER CARE, por este motivo se ha asignado un monto de $us 100 mensual para estas actividades.

CRONOGRAMA:

tiempo en semanas

```
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
-------------------------------------------------------------
a a
    b
      c
        d d d d d  d
          e e e e  e  e  e
                        f  f
                              g  g  g  g
                                         h  h
                                            i i  i  i
-------------------------------------------------------------
12 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 2223 24
```

a.- Preparación, organización, selección del personal.

b.- Validación (prueba de campo), reformulación del cuestionario.

c.- Capacitación.(una semana)

d.- Trabajo de campo (entrevistas, 6 semanas).

e.- Introducción de datos. (7 semanas)

f.- Limpieza de datos.(2 semanas)

g.- Elaboración de cuadros e informe preliminar.(4 semanas)

h.- Revisión del documento preliminar. (2 semanas)

i.- Elaboración del informe final. (4 semanas)

Para obtenér los datos de producción de los servicios que trabajan con el proyecto MOTHER CARE, se solicitará a los directores de los establecimientos mediante memorandum validado por el coordinador del proyecto, el llenado de un formulario que contenga los datos básicos de producción, los mismos que serán verificados por los investigadores de C.I.A.E.S. Esta actividad se realizará en la primera semana del trabajo de campo. Sería recomendable que a través de mecanismos del proyecto se consiga esta información cada

tres meses.

C.I.A.E.S.
CentrodeInvestigación, Asesoria
y Educación en salud.

Cochabamba,27 de septiembre de 1991

Mrs.

Patricia Taylor MPH

PROYECTO MOTHER CARE - COCHABAMBA -

Oficina en Washington - U.S.A.

Distinguida señora:

Tenemos el agrado de poner a su consideración la propuesta elaborada conjuntamente la Dra. Nancy Sloan, acerca del estudio cuantitativo que el Proyecto Mother Care desarrollará en Cochabamba dentro de las actividades previstas en el mencionado proyecto.

Esperamos que las consideraciones expuestas acerca de los aspectos técnicos y presupuestario sean suficientemente explicitas, si requiriera mayór información acerca de cualquiér punto estaremos prestos a enviarsela.

Sin otro motivo y en espera de su respuesta , nos es grato, reiterarle nuestras más distinguidas consideraciones.

Atentamente.

DIRECTORIO DE C.I.A.E.S.

APPENDIX 4

Preliminary Study Questionnaires

APPENDIX 4. Preliminary Study Questionnaires

PROYECTO MOTHERCARE

1.	FECHA	<dd/mm/yy>
2.	SECTOR: _____	
3.	MANZANO NUMERO:	#######
4.	IDENTIFICACION NUMERO	####
5a.	Esta Ud. actualmente embarazada?	#
5b.	Cuantos meses de embarazo tiene?	##
6.	Estuvo Ud. embarazada alguna vez en el ultimo ano?	#
7a.	En el ultimo ano, vivio en esta casa alguna mujer entre las edades de 15 y 45 que ahora no vive aca?	#
7b.	Se mudo o se murio?	#
7c.	Antes de morir, tuvo ella alguno de los siguientes sin omas:	
7c1.	Eclampsia/ataques	#
7c2.	Presentacion anormal	#
7c3.	Parto prolongado u obstruido	#
7c4.	Placenta retenida (retained placenta)	#
7c5.	Hemorragia postparto	#
7c6.	Falta de latido de corazon de la wawa	#
7d.	Murio debido un accidente o por una enfermedad?	#
7e.	Estuvo embarazada ella cuando murio?	#
7f.	Habia dado a luz dentro de un mes antes de morir?	#

7g. Cual era su relacion con esa persona? #

8. GRUPO: A B C _

9a. Cuanto tiempo esta viviendo aqui en Cochabamba? ##

9b. Antes de llegar a vivir aquí a Cochabamba, dónde vivió Ud? #

10a. Cual es su fecha de nacimiento? <dd/mm/yy>

10b. Cuantos anos tiene? ##

FORMULARIO A

IDENTIFICACION NUMERO

11. Que idioma (lengua) hablan habitualmente los miembros de esta familia o la mayoria de ellos? #

12a. Alguna vez Ud. fue a la escuela o colegio? #

12b. Cual es el ultimo ano de estudios que Ud. aprobo? ##

13. Tiene su familia
13a. Radio #
13b. Televisor #
13c. Carro #
13d. Seguro Social #

14. Cual es su estado civil actual? #

15. Vive Ud. actualmente con el padre de este nino? #

16. Cual es la principal ocupacion que su esposo (companero) tiene? (INDAGUE:) Que cosas hace que tareas realiza el principalmente en su trabajo? #

17. Cuantas veces ha estado Ud. embarazada, incluyendo nacidos vivos, nacidos muertos y fracasos? ##

18a. Cuantos embarazos terminaron en nacidos vivos? ##

18b. Cuantos embarazos terminaron en un nacidos muertos? ##

18c. Cuantos embarazos terminaron en un fracasos espontaneos (malpartos o fracasos naturales)? ##

26a. Le dara pecho a este nino despues de nacer? #

26c. Le dara leche corta o suero? #

27a. Dara mamadera al nino? #

30. Durante este embarazo, se hizo controlar (por ese embarazo)? #

30a. Por que va al control? #

30b. Quien le controla por el embarazo? #

30c. En este embarazo, cuantos meses de

embarazo tenia cuando fue al control por primera vez? ##

30d. Cuantos controles hizo hasta ahora? ##

31a. Durante este embarazo, le pusieron a Ud. alguna inyeccion para evitar que el nino tuviera tetano? #

31b. Cuantas vacunas contra el tetano le pusieron? #

32a. Algunas veces hacen un examen a las mujeres para examinar por el cancer de la matriz? Conoce Ud. ese examen? #

32b. Le hizo a Ud. en el ano pasado un examen del cancer de la matriz? #

33a. Quien le va a atender su parto? #

33b. En los dos anos pasados, recibio la persona que va a atender su parto consejos de un doctor, enfermera u otra persona con capacitacion formal en el parto sobre como atender un parto? #

33c. Donde va a tener lugar el parto? #

33d. Porque eligio este lugar para su parto? #

39a. Conoce algunos signos de peligro del

65

embarazo? #

39b. Cuales son?
39b1. Eclampsia/ataques #
39b2. Edema/hinchazon de manos/cara #
39b4. Hemorragia antenatal #

40. Tuvo Ud. alguna vez durante este embarazo?
40a. Eclampsia/ataques #
40b. Edema/hinchazon de manos/cara #
40c. Sangrado o Hemorragia antenatal #

40d. Le atendio alguien para estos problemas? #

40e. Quien? #

41a. Conoce algunos signos de peligro materno

del parto? #

41b. Cuales son?
41b1. Eclampsia/ataques #
41b2. Parto prolongado u obstruido #
41b3. Placenta no salio (retained placenta) #
41b4. Hemorragia despues del parto #

43a. Conoce algunos signos de peligro del nino

en el parto? #

43b. Cuales son?
43b1. wawa trancada #
43b2. Falta de latido de corazon #
43b3. Nace azul/morado #

44. Que metodos conoce Ud.? INDAGUE: Algun otro?

44b1. Pildora #
44b2. Dispositivo Intrauterino #
44b3. Inyecciones #
44b4. Diafragma/Espuma/Tabletas #
44b5. Condon #
44b6. Met. Irreversible #
44b7. Abstenencia #
44b9. Interrumpir #
44b10. Metodo Natural/Ritmo #
44b11. Otros Metodos #

46a. Despues del nacimiento de este nino va a usar algun metodo para no quedar embarazada? #

47. Cuales metodos usara?
47a. Pildora #
47b. Dispositivo Intrauterino #
47c. Inyecciones #
47d. Diafragma/Espuma/Tabletas #
47e. Condon #
47f. Ligatura de trompas #
47g. Abstinencia #
47h. Interrumpir #
47j. Metodo Natural/Ritmo #
47k. Otros Metodos (incl. vasectomia) #

48b. Por que no usara, desconocimiento, miedo, costo, o su marido no quiere? #

52. En cuales dias entre una menstuacion y otra cree usted que la mujer debe cuidarse para no quedar embarazada? #

53a. Escucho o ha visto alguna vez un mensaje sobre:
53a1. Planificacion familiar? #
53a2. Control para el embarazo #
53a3. Dar la leche calostro #
53a4. Utilizacion de pujantes #
53a5. Atencion de recien nacidos #
53a6. Cuidado del cordon umbilical #
53a7. Parto limpio #
53a8. Signos de peligro en el embarazo #
53a9. Signos de peligro en el parto #
53a10. Signos de peligro en el nino antes de nacer #

53b. Lo escucho o ha visto por:

	Radio	Tele vision	Videos	Folletos	Roto folios	Afiches	Medico	Enfer meras
53b1	R1#	T1#	V1#	F1#	RF1#	A1#	M1#	E1#
53b2	R2#	T2#	V2#	F2#	RF2#	A2#	M2#	E2#
53b3	R3#	T3#	V3#	F3#	RF3#	A3#	M3#	E3#
53b4	R4#	T4#	V4#	F4#	RF4#	A4#	M4#	E4#
53b5	R5#	T5#	V5#	F5#	RF5#	A5#	M5#	E5#

53b6	R6#	T6#	V6#	F6#	RF6#	A6#	M6#	E6#
53b7	R7#	T7#	V7#	F7#	RF7#	A7#	M7#	E7#
53b8	R8#	T8#	V8#	F8#	RF8#	A8#	M8#	E8#
53b9	R9#	T9#	V9#	F9#	RF9#	A9#	M9#	E9#
53b10	R10#	T10#	V10#	F10#	RF10#	A10#	M10#	E10#

53c. Ultimamente, Cuantas veces en la

semana vio o escucho mensajes sobre:

53c1. Planificacion familiar #
53c2. Control para el embarazo #
53c3. Dar la leche calostro #
53c4. Utilizacion de pujantes #
53c5. Atencion de recien nacidos #
53c6. Cuidado del cordon umbilical #
53c7. Parto limpio #
53c8. Signos de peligro en el embarazo #
53c9. Signos de peligro en el parto #
53c10. Signos de peligro en el nino antes de nacer #

54. Le gustaria tener otro hijo o prefiere

no tener mas hijos? #

MOTHERCARE PROJECT

1. DATE <dd/mm/yy>
2. SECTOR: _____
3. BLOCK NUMBER: #######
4. IDENTIFICATION NUMBER: ####

5a. Are you currently pregnant? #
Yes = 1
No = 2 (→6)
Don't know = 8 (→6)

5b. How many months pregnant are you?

6. Were you pregnant at any time during the last year? #
Yes = 1
No = 2
Don't know = 8

7a. During the past year, did any woman between the ages of 15 and 45 live in this house, who no longer lives here? #
Yes = 1
No = 2 (→8)
Don't know = 8 (→8)

7b. Did she move, or die? #
Moved = 1 (→STOP)
Died = 2
Don't know = 8 (→STOP)

7c. Before dying, did she have any of the following symptoms?

	Yes=1	No=2	Don't Know=8
7c1. Eclampsia/attacks			#
7c2. Abnormal presentation			#
7c3. Prolonged or obstructed birth			#
7c4. Retained placenta			#
7c5. Postpartum hemmorhage			#
7c6. No newborn heartbeat			#

7d. Did she die due to an accident or illness? #
Accident = 1
Illness = 2
Don't know = 8

7e. Was she pregnant when she died? #
Yes = 1
No = 2 (→7g)
Don't know = 8

7f. Had she given birth within one month before dying?

	#
Yes	1
No	2
Don't know	8

7g. What was your relationship with this person?

	#
Daughter	1
Mother	2
Sister	3
Other	7

INSTRUCTIONS

(IF Q5a=YES, USE QUESTIONNAIRE "A." READ "The following questions refer only to the current pregnancy.")

(IF Q5a=NO AND Q6=YES, USE QUESTIONNAIRE "B." READ "The following questions refer only to the pregnancy you had within the last year.")

(IF Q5a=NO AND Q6=NO, AND IF Q7e Q7f=YES, STOP AFTER QUESTION 10b)

8. GROUP (CIRCLE ONE) A B C _

9a. How long have you lived here in Cochabamba ## years

Always = 96 (→10a)

(IF SHE IS VISITING, STOP THE INTERVIEW)

9b. Before coming to live in Cochabamba, where did you live

	#
Santa Cruz	1
Potosi	2

70

APPENDIX 5

Preliminary Analytic Plan

APPENDIX 5. Preliminary Analytic Plan

SKELETON TABLES: COCHABAMBA MOTHERCARE STUDY

SEPARATE TABLES FOR PREGNANT, TERMINATED PREGNANCY IN LAST 12 MONTHS, AND DECEASED IN PAST 12 MONTHS ASSOCIATED WITH PREGNANCY OR CHILDBIRTH

v

SOCIO-DEMOGRAPHIC CHARACTERISTICS

Maternal Characteristics	TOTAL SAMPLE	Medico areas	Combase areas	Profema areas	Others w/o NGO clinic
1. Marital Status					
2. Lives with husband/ father of expected child					
3. Education (mean, cats, literate)					
4. Family Owns: -Radio -TV -Car -Has Social Security					
5. Partner's Current Occupation					
6. Language -%Spanish -%Quechua %Other					
6. Duration lived in Cochabamba					

MATERNAL CHARACTERISTICS					
Maternal Characteristics	TOTAL SAMPLE	Medico area	Combase area	Promefa area	Other
1. Age (mean, cats)					
2.Gestation at interview (mean, cats) or					
3.. Months since end of last pregnancy					
4. Gravidity(mean,cats)					
5. Parity (mean,cats)					

LAST BIRTH CHARACTERISTICS**					
Maternal Characteristics	TOTAL SAMPLE	Medico area	Combase area	Promefa area	Other
6. %Singletons last birth					
7. %Livebirths* last birth					
8. %Stillbirths* last birth					
9. %Spontaneous AB* last birth					
10.%Induced AB* last birth					
11.%Small* last birth					
12.%Male/female* last birth					
13. %Last birth died in neonatal period* number died from -resp probs -convulsions -fever -jaundice -blue -chilled/low body temp					
14. % Last birth died in infancy					
15.%Still alive youngest child experienced in past month -resp probs -convulsions -fever -jaundice -blue -chilled/low body temp					
16.% of 15 total received medical attn for these problems					
17.% of 16 received attn from: MD, RN, Aux., Midwife, Father of child, other					

* Livebirth singletons, only
** Women terminating a pregnancy in the last year only; one year prevalence rates

BREASTFEEDING OF LAST CHILD					
Breastfeeding	TOTAL SAMPLE	Medico area	Combase area	Promefa area	Other
1. % Ever					
2.Mean duration					
3. %Gave colostrum					
4. %Other liquid or food before initiating b.f.					
5. %Bottlefed in first year of life					
6.%Still b.f.(+mean age children)					
7.Mean age of 5 at inception of bottlefeed					

PRENATAL HEALTH CARE UTILIZATION					
Maternal Characteristics (pregnant: total & by trimester; nonpregnant terminating preg. last yr)	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
1.% Antenatal visit (for current/last pregnancy)					
2. % Went for -routine (well) care -due to complication -to receive food supl					
3. % Received prenatal care by type of provider					
a. % MD					
b. % RN					
c. % Aux					
d. % Midwife					
e. % Father of child					
f. % Other					
4. Mean gest at first antenatal visit					
5.# Antenatal visits					
6. % TT injection %0,1,2,>2					
7.Knowledge re Pap smear					
8. % Pap examination in past year					
9. % Know danger signs (% mentioned eclampsia/convulsions, hand/face edema, hem/bleeding)					
10. % Had signs in 9					
11. % of 10 received attn for condition					
12. % 10 from whom received attention					

INTRA & POSTPARTUM HEALTH CARE UTILIZATION					
Maternal Characteristics (nonpregnant terminating preg. last yr)	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
4. % Birth attended by type of provider					
a. % MD					
b. % RN					
c. % Aux					
d. % Midwife					
e. % Father of child -recd training -didn't					
f. % Other					
5.Where gave birth (% by place)					
6.Why gave birth there? (by place)					
7.%Manteo duro					
8.%Pujantes by type					
6. Cord care: -instrument by type -how cleaned -treated home prep -tied with what -how cleaned tie mat					
7.%Special care placenta					

NEW BORN HEALTH CARE					
Care Characteristics	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
1. % Home births bathed immediately					
2. % Home births Covered up immediately					
3. % Homebirths left separated from mother after birth					
4. Mean time of 3 left separated from mother					
5. Where 3 were left separated % by categories					

DANGER SIGNS: PREGNANCY, LABOR & DELIVERY, NEWBORN					
Maternal Knowledge	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
A. % Know signs in pregnancy					
B. % Had signs in pregnancy					
C. % B received attn for signs in pregnancy					
D. % C by type of provider					
1A,B,C,D. % Eclampsia					
2A,B,C,D. % Edema					
3A,B,C,D. % Hemorrage					
A. % Know signs in L&D					
B. % Had signs in L&D					
C. % B received attn for signs in L&D					
D. % C by type of provider					
4A,B,C,D. % Eclampsia					
5A,B,C,D. % Prolonged or obstructed labor					
6A,B,C,D. % Hemorrage					
7A,B,C,D. % Retained Placenta					
A. % Know signs in Newborn/ Fetus					
B. % Had signs in N/F					
C. % B received attn for signs in N/F					
D. % C by type of provider					
8A,B,C,D. % Malpresentation					
9A,B,C,D. % Lack of fetal heartbeat					
10A,B,C,D. % Newborn blue					

40

NEW BORN HEALTH CARE					
Care Characteristics	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
1. % Home births bathed immediately					
2. % Home births Covered up immediately					
3. % Homebirths left separated from mother after birth					
4. Mean time of 3 left separated from mother					
5. Where 3 were left separated % by categories					

FAMILY PLANNING UTILIZATION					
F.P. Characteristics	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
A. Methods known					
B. Methods used since last birth					
C. Methods currently using					
D. Where obtained method currently using					
E. Who advised respondent re current method					
1A,B % None					
2A,B,C,D,E % Pills					
3A,B,C,D,E %IUD					
4A,B,C,D,E %Injections					
5A,B,C,D,E %Diaphragm,Foam					
6A,B,C,D,E %Condoms					
7A,B,C,D,E %Tubal lig. fem.					
8A,B,C,D,E %Abstinence					
9A,B,C,D,E %Withdrawal					
10A,B,C,D,E %Rythym					
11A,B,C,D,E %Other incl. vasectomy					
12. Mean number of months abstained from sex since last birth					
13. Mean number of months since last birth started util. of any modern method (users only)					
14.Why not using any method (non users of any method)					
15.% correctly know fertile period					
16.Desire to limit family size (% yes; to what size?)					

INDEPENDENT & MEDIATING VARIABLES					
	TOTAL SAMPLE	Medico area	Combase area	Profema area	Other
A. Messages heard/seen					
B. Media by which heard seen (% radio, TV, videos, pamphlets, flipcharts, posters, MDs, RNs)					
C. Frequency of reception					
1A,B,C Re family planning					
2A,B,C Re Prenatal care					
3A,B,C Re Giving colostrum					
4A,B,C Re Utilization of pujantes					
5A,B,C Re Newborn care					
6A,B,C Re care of umbilical cord					
7A,B,C Re Clean birth					
8A,B,C Re danger signs of pregnancy					
9A,B,C Re danger signs of L&D					
10A,B,C Re danger signs of fetus in L&D					

FINAL STATUS: STRATIFIED BY PREGNANCY STATUS (USE OF SERVICES IN OB & NEWBORN EMERGENCIES, INFANT FEEDING, PRENATAL CARE, PAP EXAMS, TRAINED BIRTH ATTENDANT, USE OF MANTEO & PUJANTES, CLEAN CORD CARE, MODERN METHODS FAMILY PLANNING)				
	Mean	β, R^2, p Compared to Other area (not directly serviced by Medico, Combase, Profema)		
Status	Other area	Medico	Combase	Profema
Version 1				
Version 2				
Version 3				
Version 4				

Objective: Describe the effects of an IEC program to improve Knowledge and Practices regarding status/outcome variables

Models Stratified by: Medico, Combase, Profema vs. Other areas not directly serviced by these organizations; separate runs for pregnant vs. terminated pregnancy last year.

Covariates: Age, Parity, marital status (Y/N), education, other SES (land, radio), language, time living in Cochabamba, lives with father of last child/pregnancy, sex of child (excluding multiple gestation).

Mediators: Media from which heard IEC messages, frequency of hearing messages.

Independent variable: Heard/saw IEC messages about dependent variable.

Dependent variables: Individual indices of use of services in ob & newborn emergencies, infant feeding, prenatal care, pap exams, trained birth attendant, use of manteo & pujantes, clean cord care, modern methods family planning (See Table 1: essential items, project evaluation protocol).

Four versions of each of the above regression models will be run.
Version 1 will not control for any measurement.
Version 2 will control for baseline measurement of the dependent variable.
Version 3 will control for the dependent variable at baseline, and covariates.
Version 4 will control for baseline measurement of the dependent variable, covariates and mediators.

84