

APPENDICES

Appendix A. Information Sheet

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Information Sheet

To be explained to all the women participating in the study

You are invited to take part in a research study. Please take time to read the following information or get the information explained to you in your language. Listen carefully and feel free to ask questions if there is anything that is not clear or you do not understand. If you decide to join the study, you will need to sign or put a thumbprint on a form saying you agree to be in the study. You will receive a copy of this form. The Gambia Government/MRC Joint Ethics Committee, an overseeing committee of scientists and lay persons has reviewed the study and granted permission for it to take place.

Why is this study been done?

In Africa, severe pneumonia is a serious illness that is common in children under 5 years of age. One risk factor for developing severe pneumonia is exposure to smoke from cooking fires. Wood used with 3-stone stove produces a lot of smoke while cooking. We want to see whether briquette, when used with a new stove, produces less smoke.

What will we ask you to do?

We will sign-up 250 mothers and their children less than 10 months of age for the study. Before the start of the study, we will collect a nasal swab sample from all the mothers and their selected children. We will place a thin cotton-tipped swab into one of your nostrils to collect some fluid from the back of the nose.

After swabbing, we will choose by chance half of the mothers to receive briquettes and a new stove. The other half of the mothers will continue using wood and the 3-stone stove. Every woman receiving briquettes and the new stove will be trained for one day on how to use them properly. For 14 weeks, briquettes and wood will be delivered each week to all the households, and the women must agree to only use the fuel they are given. During this period, we will measure the indoor air pollution in all of the households. On either a Monday or Thursday, we will visit your house and set up a pump in your kitchen. This will run for 48 hours and will measure how much air pollution your stove produces. During this time, you must not touch or interfere with the pump. You must also cook normally and not change your behaviour. After 48 hours, we will collect the pump. Also during the study, we will conduct an interview with each of the mothers using a questionnaire. This questionnaire will ask questions about the participants, households, and kitchen characteristics.

At the end of these 14 weeks, we will collect another nasal sample from all the mothers and their children. We will also ask all the mothers who used the briquettes and new stove some questions to see how they liked or disliked this new method of cooking. At this point, the study will be complete.

It is very important that you continue with your normal cooking and childcare practices during the study. If we find that you are not cooking like you usually do, we will have to remove you from the study. If the study needs to be stopped for any reason, you will be informed. In case you are sick and the investigator decides that you cannot participate in the study, you will receive immediate care at the study site and then be referred to the appropriate health facility.

What will happen to the samples taken in this study?

We will look for germs in all the nasal swab samples at the MRC laboratories. These samples may be used for future testing. The samples from the indoor air pollution pumps will be sent to the United States to be measured for smoke. After the research is completed and results are available, the investigators will examine all the information and the study team will inform you, your family and the community about the results

What side effects or risks can you expect in the study?

All the women receiving briquettes and the new stove will be trained on how to use them properly so there will be very little risk when using them. The nasal swabs collected in this study will not be painful and will not cause any harm to you, but might cause a little discomfort.

What benefits can you expect in the study?

If the study shows that briquettes and the new stove help to reduce indoor air pollution, then the results might help these product become available in the future to the Gambian population.

Will you be given anything for participating in the study?

You will not receive money, but you will receive fuel during the study.

What happens if you refuse to participate in the study or change your mind later?

You are free to participate or not in the study and you have the right to drop out of the study at anytime without giving a reason. This will not affect the standard medical care that you would normally receive. In case you decide to drop out of the study, we will ask your permission before we work on the already collected samples. We will not work on your samples without your permission.

Who should you contact if you have questions?

Please feel free to ask any question you might have about the study. If you have any queries or worries, you can contact Bunama Singhateh at 7065303. You can also always call the personal number of the study staff given to you.

How personal records will remain confidential and who will have access to your/your child's personal information?

All information that is collected about you in the course of the study will be kept strictly confidential. Your personal information will only be available to the study team members and might be seen by some authorised persons from the Ethics Committee, Government authorities and sponsor.

Contact information: If you require further information about the study, please contact the following people at the addresses shown below:

Teresa Litchfield
Study Coordinator
MRC Unit, The Gambia
Fajara, P.O Box 273
Banjul, The Gambia
Phone: 4495442

Dr Claire Oluwalana
Study Clinician
MRC Unit, The Gambia
Fajara, P.O Box 273
Banjul, The Gambia
Phone: 4495442

Appendix B. Consent Form

**Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Consent Form
All Mothers**

Name of the mother

Study number of Mother [place ID sticker here]

I have read, or had explained to me, the information about this research and I understand what will be needed from me and my child if we take part in the study.

I understand that the information regarding myself and my child that is collected during this study will remain confidential.

I understand that laboratory tests will be done on the nasopharyngeal samples that my child and I have provided.

I understand that if I or my child gets sick during the study period, we can go to the MRC clinic in Fajara, and be examined and treated for free.

I understand that I do not have to take part in this study and if I refuse it will not interfere with standard healthcare for me and my family.

I have had an opportunity to ask any questions, and have had them answered.

I agree to take part in this study.

Signed/thumbprint

Date []/[]/[] (dd/mm/yyyy)

I have explained the purpose of the study to the above subject in a language she understands and I am satisfied that she willingly agrees to participate.

Name of field worker

Signed

Date []/[]/[] (dd/mm/yyyy)

Study organisers:

Teresa Litchfield (PhD student), Dr. Steve Howie, and Dr Anna Roca, MRC Unit, Fajara, The Gambia

Appendix C. Form #1: Locator Form

**Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #1: Locator Form
All Mothers/Child Pairs**

1. Mother's First Name: Last:

2. Mother's Study No: [place ID sticker here]

3. Child's First Name: Last:

4. Child's study number: [place ID sticker here]

5. Head of the Compound: Last:

6. Name of Village: _____

7. Location of the household:

8. Date ddd/mm /yyyy (12/01/2011) / /

9. Time hhh:mm (24 hour clock) :

10. Interviewer's code xxx

If there is a twin, continue to question 11. If there is no twin, the questionnaire is complete.

11. Twin's First Name: Last:

12. Twin's study number: [place ID sticker here]

Appendix D. Form #2: 1st Carriage Form

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #2: 1st Carriage Form
All Mother/Child Pairs

Serial # **Section A: Identification**A1. Mother's Study No: [place ID sticker here]A2. Child's study number: [place ID sticker here]A3. Date dd/mm /yyyy (12/02/2011) / / A4. Time of Interview hh:mm (24 hour clock) : A5. Interviewer's code xx **Section B: Child's Information**B1. Is the child currently breastfed?
1= exclusive
2= mix
3= non-breastfedB2. How many doses of pneumococcal vaccine has the child received since enrollment in the study?
0= none
1= 1dose
2= 2 doses
3= 3 doses
9= unknown

If 0 or 9, skip to question B4
Add date only if since enrollment

B3. Pneumococcal vaccination
Date dose 1 dd/mm /yyyy (12/02/2011) / /
Date dose 2 dd/mm /yyyy (12/02/2011) / /
Date dose 3 dd/mm /yyyy (12/02/2011) / / B4. Has the child had any ear discharge visible in the last two weeks?
0= no
1= yes
9= unknownB5. Has the child had a cough in the last two weeks?
0= no
1= yes
9= unknownB6. Has the child been admitted to any Health center in the last 30 days?
0= no
1= yes
9= unknownB7. Has the child had any antibiotics during the last 30 days?
0= no
1= yes (records available)
2= yes (records not available)
9= unknown

Section C: Mother's Information

- C1. Do you cough first thing after waking up in the morning?
 0= never
 1= once a month
 2= once a week
 3= all the time
- C2. Do you bring up phlegm from your chest first thing after you wake up in the morning?
 0= never
 1= once a month
 2= once a week
 3= all the time
- C3. Do you currently have, or have you had in the past 3 months wheezing or whistling in your chest?
 0= no
 1= yes
 9= unknown
- C4. Have you visited a health center, hospital or health care provider for any coughing and breathing problem during the past 3 months?
 0= no
 1= yes
 9= unknown

Section D: Sample Information

- D1. Has the nasopharyngeal swab been taken from the mother?
 0= no
 1= yes
- D2. NPS Sample number of the mother
 [place sample sticker here]
- D3. Has the nasopharyngeal swab been taken from the child?
 0= no
 1= yes
- D4. NPS Sample number of the child
 [place sample sticker here]

If the child is a twin, continue to the next page. If not, the questionnaire is complete.

Section E: Twin's Information

E1. Twin's study number [place ID sticker here]

E2. Is the child currently breastfed?

1= exclusive
2= mix
3= non-breastfed

E3. How many doses of pneumococcal vaccine has the child received since enrollment in the study?

0= none
1= 1dose
2= 2 doses
3= 3 doses
9= unknown

*If 0 or 9, skip to question E5
Add only if since enrollment*

E4. Pneumococcal vaccination |_|_|/|_|_|/|_|_|_|_|

Date dose 1 |_|_|/|_|_|/|_|_|_|_|

Date dose 2 |_|_|/|_|_|/|_|_|_|_|

Date dose 3 |_|_|/|_|_|/|_|_|_|_|

E5. Has the child had any ear discharge visible in the last two weeks?

0= no
1= yes
9= unknown

E6. Has the child had a cough in the last two weeks?

0= no
1= yes
9= unknown

E7. Has the child been admitted to any Health center in the last 30 days?

0= no
1= yes (records available)
2= yes (records not available)
9= unknown

E8. Has the child had any antibiotics during the last 30 days?

0= no
1= yes (records available)
2= yes (records not available)
9= unknown

E9. Has the nasopharyngeal swab been taken from the twin?

0= no
1= yes

E10. NPS Sample number of the twin [place sample sticker here]

Appendix E. Form #3: IAP Measurements

Indoor Air Pollution Carriage Study
SCC 1284
Form #3: IAP Measurements
All Mothers

Serial # |_|_|_|_|_|

Section A: Sample start

A1. Mother's Study No	[Place sticker here]	
A2. Interviewer's code	xx	_ _
A3. Pump type	1= Casella 2= SKC	_
A4. Pump number	xx	_ _
A5. Start Label	[Place sticker here]	
A6. Start Date	dd/mm /yyyy (12/02/2011)	_ _ / _ _ / _ _ _ _
A7. Start time	hh:mm (24 hour clock)	_ _ : _ _
A8. Start Flow rate	x.xx (liters/minutes)	_ . _ _
A9. Distance from edge of fire to pump	xxx (cms)	_ _ _

Section B: Sample end

B1. Interviewer's code	xx	_ _
B2. End Label	[Place sticker here]	
B3. Stop Date	dd/mm /yyyy (12/02/2011)	_ _ / _ _ / _ _ _ _
B4. Stop Time	hh:mm (24 hour clock)	_ _ : _ _
B5. Pump run time	xxxx (minutes)	_ _ _ _
B6. Stop Flow rate	x.xx (liters/minutes)	_ . _ _
B7. Problems	0= no problem 1= pump was off 2= pump was running badly 3= pump was running but had fallen 4= pump was running but stand was moved 5= other (specify)	_ Other: _____

If measuring blank or duplicate, complete the reverse side of the form

Section C: Duplicate/Blank start

- C1. Start Label *[Place sticker here]*
- C2. Duplicate or Blank 1= duplicate
2= blank
- If blank, skip to Section D,*
- C3. Pump type 1= Casella
2= SKC
- C4. Pump number xx
- C5. Start time hh:mm (24 hour clock)
- C6. Start Flow rate x.xx (liters/minutes)

Section D: Duplicate/blank end

- D1. End Label *[Place sticker here]*
- If blank, skip to Question D5*
- D2. Stop Time hh:mm (24 hour clock)
- D3. Pump run time xxx (minutes)
- D4. Stop Flow rate x.x (liters/minutes)
- D5. Problems 0= no problem
1= pump was off
2= pump was running badly
3= pump was running but had fallen
4= pump was running but stand was moved
5= other (*specify*)
- Other: _____

Appendix F. Form #4: Household Questionnaire

**Indoor Air Pollution Carriage Study
SCC 1284
Form #4: Household Questionnaire
All Mothers**

Serial # | | | | |

Section A: Identification

A1. Mother's Study No [Place sticker here]

A2. Child's study number [Place sticker here]

A3. Date dd/mm/yyyy (12/02/2011) | | | | |

A4. Time of Interview hh:mm (24 hour clock) | | : | |

A5. Interviewer's code xx | |

Section B: Child's Information

B1. Date of birth dd/mm/yyyy (12/02/2011) | | | | |

B2. Gender 1 = male | 2 = female

B3. Currently breastfed 1 = exclusive | 2 = mix | 3 = non-breasted

B4. Weight xx.xx kg | | . | |

B5. Height xx.x cm | | . | |

Section C: Mother's Information

C1. Date of Birth dd/mm/yyyy (12/02/2011) | | | | |

C2. Age (if DOB unknown) xx | |

C3. How many years of schooling have you completed?
0 = none or less than a year | 1 = 1-3 years | 2 = 4-6 years | 3 = more than 6 years | 9 = unknown

C4. Can you read English? 0 = no | 1 = yes

C5. Can you write in English? 0 = no | 1 = yes

C6. Do you smoke? 0 = no | 1 = yes

Section D: Household information

- D1. How many people live in the compound? xx
- D2. How many people are in the same household (share the same pot of food)? xx
- D3. How many people usually share the same house with the child? xx
- D4. How many people usually sleep in the same room as the child? xx
- D5. How many people usually share the same bed as the child? xx
- D6. How many people in the compound are <5 years? xx
- D7. Who looks after the child most of the time?
 1= you (mother)
 2= other family member
 3= outside person
- D8. Does your child hang out in or around the kitchen?
 0= No
 1= Yes
- D9. Where does your child spend most of their time while you are cooking?
 1= on your back
 2= in cookhouse
 3= near cookhouse
 4= away from cookhouse
- D10. Where do you mostly do your cooking in the rainy season?
 1= inside main house
 2= inside separate cookhouse
 3= outside under a roof
 4= outside in the open air
- D11. Where do you mostly do your cooking in the dry season?
 1= inside main house
 2= inside separate cookhouse
 3= outside under a roof
 4= outside in the open air
- D12. Do you share your cooking area with other households?
 0= no
 1= yes
- D13. How many stoves are used in your kitchen? xx
- D14. Do you cook meals for selling on the street or to neighbors?
 0= no
 1= yes
- D15. Do you open windows while you cook?
 0= no
 1= yes

Serial #

D16. Are there cigarette or pipe smokers living in this house?

0= no
1= yes

If no, skip to question D19

D17. How many smokers are there?

xx

D18. Where do they normally smoke?

1= inside
2= outside
3= both

D19. Is rubbish burned in the compound?

0= no
1= yes

D20. Daily Cooking activities

	Purpose of stove use <i>(Tick neither, one or both boxes. Clarify activity if other)</i>	Duration of the fire burning <i>(nearest whole hour)</i>	Days per week the mother is responsible for cooking	Location of the child most of the time <small>1= on mother's back 2= near the stove (within one meter) 3= not near stove but around kitchen 4= away from the stove but inside 5= away from the stove but outside 6= different compound</small>
Morning (5:00am-10:00am)	Cooking <input type="checkbox"/> Other <input type="checkbox"/> _____	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
Mid Day (10:00am-5:00pm)	Cooking <input type="checkbox"/> Other <input type="checkbox"/> _____	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
Evening (5:00pm-5:00am)	Cooking <input type="checkbox"/> Other <input type="checkbox"/> _____	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>

Section E: Kitchen Characteristics

E1. Dimensions of cooking area meters (1 decimal point)

E2. Height of kitchen meters (1 decimal point)

E3. Number of doorways x

E4. Number of windows x

E5. Is there a gap between walls and ceiling?

0= No
1= Yes

E6. If so, how many centimetres is the gap? centimetres (1dp)

***If there is a twin, complete reverse side.
If not, the questionnaire is complete.***

Section F: Twins Information

F1. Twin's study number

F2. Date of birth

[place sticker here]

F3. Gender

dd/mm /yyyy (12/02/2011)

|_|_|/|_|_|/|_|_|_|_|

F4. Currently breastfed

1= male

|_|

2= female

1= exclusive

|_|

2= mix

3= non-breastfed

F5. Weight

F6. Height

xx.xx kg

|_|_|.|_|_|

xx.x cm

|_|_|.|_|

Appendix G. Form #5: 2nd Carriage Form

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #5: 2nd Carriage Form
All Mother/Child Pairs

Serial # **Section A: Identification**A1. Mother's Study No: [place ID sticker here]A2. Child's study number: [place ID sticker here]A3. Date dd/mm /yyyy (12/02/2011) / / A4. Time of Interview hh:mm (24 hour clock) : A5. Interviewer's code xx **Section B: Child's Information**B1. Is the child currently breastfed?
1= exclusive
2= mix
3= non-breastfedB2. How many doses of pneumococcal vaccine has the child received since enrollment in the study?
0= none
1= 1dose
2= 2 doses
3= 3 doses
9= unknown

If 0 or 9, skip to question B4
Add date only if since enrollment

B3. Pneumococcal vaccination
Date dose 1 dd/mm /yyyy (12/02/2011) / / Date dose 2 dd/mm /yyyy (12/02/2011) / / Date dose 3 dd/mm /yyyy (12/02/2011) / / B4. Has the child had any ear discharge visible in the last two weeks?
0= no
1= yes
9= unknownB5. Has the child had a cough in the last two weeks?
0= no
1= yes
9= unknownB6. Has the child been admitted to any Health center in the last 30 days?
0= no
1= yes
9= unknownB7. Has the child had any antibiotics during the last 30 days?
0= no
1= yes (records available)
2= yes (records not available)
9= unknown

Section C: Mother's Information

C1. Do you cough first thing after waking up in the morning?

0= never
1= once a month
2= once a week
3= all the time

C2. Do you bring up phlegm from your chest first thing after you wake up in the morning?

0= never
1= once a month
2= once a week
3= all the time

C3. Do you currently have, or have you had in the past 3 months wheezing or whistling in your chest?

0= no
1= yes
9= unknown

C4. Have you visited a health center, hospital or health care provider for any coughing and breathing problem during the past 3 months?

0= no
1= yes
9= unknown

Section D: Sample Information

D1. Has the nasopharyngeal swab been taken from the mother?

0= no
1= yes

D2. NPS Sample number of the mother

[place sample sticker here]

D3. Has the nasopharyngeal swab been taken from the child?

0= no
1= yes

D4. NPS Sample number of the child

[place sample sticker here]

If the child is a twin, continue to the next page. If not, the questionnaire is complete.

Section E: Twin's Information

E1. Twin's study number [place ID sticker here]

E2. Is the child currently breastfed?

1= exclusive
2= mix
3= non-breastfed

E3. How many doses of pneumococcal vaccine has the child received since enrollment in the study?

0= none
1= 1dose
2= 2 doses
3= 3 doses
9= unknown

*If 0 or 9, skip to question E5
Add only if since enrollment*

E4. Pneumococcal vaccination

Date dose 1 dd/mm /yyyy (12/02/2011)

Date dose 2 dd/mm /yyyy (12/02/2011)

Date dose 3 dd/mm /yyyy (12/02/2011)

E5. Has the child had any ear discharge visible in the last two weeks?

0= no
1= yes
9= unknown

E6. Has the child had a cough in the last two weeks?

0= no
1= yes
9= unknown

E7. Has the child been admitted to any Health center in the last 30 days?

0= no
1= yes (records available)
2= yes (records not available)
9= unknown

E8. Has the child had any antibiotics during the last 30 days?

0= no
1= yes (records available)
2= yes (records not available)
9= unknown

E9. Has the nasopharyngeal swab been taken from the twin?

0= no
1= yes

E10. NPS Sample number of the twin [place sample sticker here]

Appendix H. Form #6: Intervention Assessment

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #6: Intervention Assessment
All Mothers in Exposed Group

Serial # |_|_|_|_|

Section A: Identification

- A1. Mother's Study No: [place ID sticker here]
- A2. Date
- A3. Time
- A4. Interviewer's code

Section B: Intervention Assessment

- B1. How easy was the stove to use?
 1= very difficult
 2= difficult
 3= easy
 4= very easy
- B2. Is it easier or harder to use than the 3-stone?
 1= harder to use than 3-stone
 2= same to use as 3-stone
 3= easier to use than 3-stone
- B3. How easy was it to use the briquettes?
 1= very difficult
 2= difficult
 3= easy
 4= very easy
- B4. Were the briquettes easier or harder to use than wood?
 1= harder to use than wood
 2= same to use as wood
 3= easier to use than wood
- B5. How easy was it to light the briquettes?
 1= very difficult
 2= difficult
 3= easy
 4= very easy
- B6. Did the briquettes produce a lot of smoke while lighting?
 1= very little
 2= little
 3= some
 4= a lot
- B7. Did the briquettes produce a lot of smoke while cooking?
 1= very little
 2= little
 3= some
 4= a lot
- B8. Did the briquettes produce more or less smoke than wood while cooking?
 1= more smoke than wood
 2= same smoke as wood
 3= less smoke than wood

- B9. Did the briquettes go out often? 0= no 1= yes
- B10. Would you use the stove if you were able to afford it? 0= no 1= yes
- B11. Would you use briquettes if they cost the same amount as wood? 0= no 1= yes

Section C: User behaviour

- C1. Did all the cooks in your household use the stove for all of their cooking? 1= never 2= sometimes 3= most of the time 4= always
- C2. If not 'always', why not? 1= pot was too big for the stove 2= did not like the stove 3= not enough stoves 4= other (specify) Other: _____
- C3. Did all the cooks in your household use the briquettes for all of their cooking? 1= never 2= sometimes 3= most of the time 4= always
- C4. If not 'always', why not? 1= did not like the briquettes 2= not enough briquettes 3= briquettes weren't hot enough 4= other (specify) Other: _____

C5. Comments:

Is there anything you would like to say about the new stoves and briquettes?
(Write the respondents answers down below)

Appendix I. Form #7: Adverse Events

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #7: Adverse Events

Serial # |_|_|_|_|_|

Section A: Identification

- A1. Mother's Study No: [place ID sticker here]
- A2. Child's Study No: [place ID sticker here] (if the child experienced the incident)
- A3. Date |_|_|/|_|_|/|_|_|_|_|
- A4. Time |_|_|:|_|_|
- A5. Interviewer's code |_|_|

Section B: Details of Incident

- B1. What was the date of the incident? |_|_|/|_|_|/|_|_|_|_|
- B2. Who experienced the incidence? |_|
- B3. What was the incident? |_|
 Specify if other: _____
- B4. Did the person seek medical care? |_|

If no, skip to question B8

- B5. If yes to B4, state where |_|

 Specify if other: _____
- B6. Did the person stay overnight in a hospital? |_|

If no, skip to question B8

- B7. If yes to B6, how many nights? |_|
- B8. Outcome |_|

B9. Describe the incident in detail *(Please attach copies of relevant reports)*

B10. Please give reasons why you consider the event to be related to the study?

Name of person reporting the incident: _____

Relationship to the Injured: _____

Telephone number: _____

Appendix J. Form #8: 1st Laboratory Isolation Form

**Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #8: 1st Laboratory Isolation Form**

Serial #

Section A: Identification

A1. Laboratory Sample No: IAP- -N

A2. Date specimen received in the lab / /

A3. NPS Location:

Freezer	Rack	Tray	Row	Position
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>

Section B: Lab Analysis

B1. Pneumococcus isolated =No, =Yes

B2. Has a quantitative count been performed? =No, =Yes

B3. Quantitative count result x (1 to 4)

B4. Pneumococcal Serotype 1:

B5. Pneumococcal Serotype 2:

B6. Pneumococcal Serotype 3:

B7. Antibiotic susceptibility zone size...mm Interpretation (S,R,I)

- a) Oxacillin (1 µg)
- b) Chloramphenicol (30µg)
- c) Erythromycin (15 µg)
- d) Co-trimoxazole (25 µg)
- e) Tetracycline (10 µg)
- f) Cefotaxime (30 µg)

B8. Isolate location:

Freezer	Rack	Tray	Row	Position
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>

Lab Scientist Signature: _____ Date: _____

Appendix K. Form #9: 2nd Laboratory Isolation Form

Indoor Air Pollution Carriage Study
SCC 1284
MEDICAL RESEARCH COUNCIL (MRC)
Form #9: 2nd Laboratory Isolation Form

Serial # **Section A: Identification**A1. Laboratory Sample No: IAP- -NA2. Date specimen received in the lab / /

A3. NPS Location:

Freezer	Rack	Tray	Row	Position
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>

Section B: Lab AnalysisB1. Pneumococcus isolated =No, =Yes B2. Has a quantitative count been performed? =No, =Yes B3. Quantitative count result x (1 to 4) B4. Pneumococcal Serotype 1: B5. Pneumococcal Serotype 2: B6. Pneumococcal Serotype 3: B7. Antibiotic susceptibility zone size...mm Interpretation (S,R,I)a) Oxacillin (1 µg) b) Chloramphenicol (30µg) c) Erythromycin (15 µg) d) Co-trimoxazole (25 µg) e) Tetracycline (10 µg) f) Cefotaxime (30 µg)

B8. Isolate location:

Freezer	Rack	Tray	Row	Position
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>

Lab Scientist Signature: _____ Date: _____

Appendix L. Manual of Operations

Stove/Fuel IAP Study L2010.99

Manual of Operations for Stove/Fuel IAP Study**I. Procedures****Preparations**

1. Preparations (each weekend)
 - a. 60 filters will be fitted into clean cyclones and labeled
 - b. Batteries for the 4 Dust Traks will be charged
 - c. Fuel will be ready for use (has been dried out to specification)
 - d. All food for CCT will be bought and prepped
2. Preparations (each night before testing)
 - a. Batteries will be charged every night for the 4 casella pumps and DustTraks
 - b. Stoves will be cleaned and ready for use
3. Preparations (after each test)
 - a. Stoves will be cleared of all debris from fuel
 - b. Kitchens will be aired out until Dust Trak reads ????
 - c. All cooking pots and utensils will be cleaned for CCT

DustTraks**Set-Up (each morning)**

1. DustTraks and all necessary accessories/batteries will be prepared the night before
2. The DustTrak will be placed approximately 1 meter away from the edge of the main fire in the cooking area. The spot will be consistent for all the tests.
3. Record the serial number of the HOBO on the IAP logsheet.
4. Remove the top of the protective box housing the DustTrak. Record the serial number of the DustTrak on the IAP logsheet.
5. Set Up the DustTrak to Record Data
 - a. Turn the DustTrak on by pressing the "ON/OFF" button once. Wait until you see fluctuating numbers and "mg/m³" displayed on the screen.
 - b. Press the "SAMPLING MODE" button once. You should see "Log 1" on the screen, in addition to a number indicating the % memory remaining.
 - c. Press the "SAMPLE" button once. You should see "Recording," "Log 1," and "Sample" all displayed on the screen.
6. Lock the DustTrak, by using a pen to slide the small "lock" slider to the locked position. You should now see "Recording" and a small arrow on the screen.
7. Plug the 6V battery adaptor into the DustTrak.
8. Connect the tubing inside the DustTrak box to the black nozzle on the DustTrak.
9. Place the DustTrak inside the DustTrak box and close the lid.
10. When DustTrak is in position, connect the 6V battery adaptor wires to the 6V battery. (Match red to red and black to black when connecting the wires)
11. Make sure the mini-pem is connected properly to the outside of the DustTrak box.
12. The DustTrak should begin at the same time as the testing. Record time on log sheet.

Monitoring Throughout the Day

1. Observe the 3 DustTraks throughout the day to assure they are working properly. If you do not hear the DustTrak running, you should investigate the problem!
 - Take the top off the DustTrak box

Stove/Fuel IAP Study L2010.99

- Turn the DustTrak on, and watch the screen until you see a small picture of a battery, and a number with a % sign next to it. If this number is less than 90%, replace the C batteries in the DustTrak.

(Note if you see “Service” on the screen when you turn the DustTrak on, then record the current date and time under “Pick-Up Date” and “Pick-Up Time”, make a note on the IAP logsheet that the DustTrak was removed because it had a Service error, and bring the DustTrak back to Biomedical Engineering.)

- Set the DustTrak to record data again following the same procedures as written above. Make sure you see “Recording” and “Log 1” on the DustTrak screen when the DustTrak is not locked. When the DustTrak is locked, make sure you see “Recording” and a small arrow on the DustTrak screen.
- Connect the 6V battery adaptor to the DustTrak. Make sure the 6V battery adaptor is connected properly to the 6 V battery (remove, and then re-insert the connections to be sure).
- Close the cover of the DustTrak box.
- If there are any problems when you attempt to start the DustTrak recording, or any other problems with the DustTrak that you do not know how to fix, record the “Pick-Up Date” and “Pick-Up Time” on the IAP logsheet, make a note on the logsheet about why you are removing the DustTrak, and bring the DustTrak back to Biomedical Engineering.

At the End of the Day

2. At the end of the day, turn off and remove all DustTraks.
 1. Before moving or touching the DustTrak, record the current date and time under “Pick-Up Date” and “Pick-Up Time” in the DustTrak section of the IAP logsheet.
 2. Remove the top of the protective box housing the DustTrak.
 3. Unlock the DustTrak by using a pen to slide the small “lock” slider to the unlocked position.
 4. Turn the DustTrak off by pressing the “ON/OFF” button once.
 5. Replace the DustTrak inside the protective box.

Casella Pumps**Set-up (before each study)**

1. Casella pumps and all necessary accessories will be prepared prior to Monday mornings at the MRC campus.
2. The Casella pump will be placed approximately 1 meter away from the edge of the main fire in the cooking area. The spot will be consistent for all the tests.
3. To set up the Casella pump:
 - a. Remove a sticker from the Casella pump PEM and record the pump serial number, start date and start time.
 - a. Turn the Casella pump on by pressing the red button.
 - b. Make sure the picture of the lock is not on the screen. If it is, press the red button 3 times quickly. Repeat until the picture of the lock is gone.
 - c. Set the flow rate to 1.80 L/min.
 - i. Press Δ once. The screen should read ‘FLOW SET.’
 - ii. Press the enter key and use the arrows to set the flow to 1.80.
 - d. Press the enter key to begin sampling.

Stove/Fuel IAP Study L2010.99

- e. To lock the Casella pump, press the red button 3 times quickly. Repeat until the picture of the closed lock appears on the screen.
- f. Place the Casella pump in the bag and place it on the wooden stand.
- g. Use a zip tie to close the bag.

After each Test

1. To end sampling with the Casella pumps:
 - Open the bags containing the pumps.
 - Record the pump run time displayed on the screen, the date and the time collected on the log sheet. Place the end label on the log sheet.
 - Press the red button 3 times to unlock the Casella pump.
 - Hold down the red button to turn the Casella pump off.
 - Remove cyclone filter from Casella pump.

Starting new Test

1. Attach new prepared cyclone to pump.
2. Repeat steps in 'set-up'

CO Tubes (for CCT)**Set-Up**

1. Remove 1 label from the CO tube, and transfer to the IAP logsheet
2. Break the tip off the CO tube. The time that the tip is broken should be recorded as the "Start Time" for the CO tube. Be sure to dispose of the broken glass tip in an appropriate waste container.
3. Place the CO tube in the Drager CO Tube holder, and attach the holder to the handle of the SKC pump box. If the equipment is outside, place the CO Tube holder underneath the handle, to protect the tube from the direct sunlight.

After Each Test

1. Remove the CO tube from the CO Tube Holder.
2. Using the ruler, measure the length of black/gray discoloration inside the CO tube. The length of the discoloration should be measured starting at the bottom of the thick black line at the bottom of the tube. The length of the discoloration should be read in millimeters (mm).
3. Record the date and time of the reading, the length of the discoloration (in mm), and the field worker's code on the IAP logsheet, in the "CO Tube (In Cooking Area)" section.
 - If the tube has turned yellow, or has any other unusual appearances or spots, indicate this in the "Notes" section of the IAP logsheet.
4. After the reading is taken, a red plastic cap should be placed on the CO tube, to tightly seal the open end of the tube.
5. At the end of the day, the CO tube should be immediately placed in the "Used CO Tubes" container in the refrigerator.

SKC Pumps (for Duplicates)**Set-Up**

1. SKC pumps and all necessary accessories will be prepared the night before.

Stove/Fuel IAP Study L2010.99

2. Place pump approximately 1 meter away from the edge of the main fire in the cooking area.
3. Use a screwdriver to open the protective box and remove the SKC pump.
4. Turn the SKC Pump on using the black switch at the bottom of the control panel.
5. Press the "START/HOLD" button one time.
6. Press the "SET-UP" button one time. You will see "Set Up/Delayed Start" on the screen.
7. To set the Sampling Period (Total length of the sampling period. For us, this is 72 hours = 4320 minutes):
 - a. Press the "MODE" button one time. You will see "Set Up/Sample Period" on the screen.
 - i. Press the "DIGIT SELECT" button one time. The 3rd digit on the screen should now be flashing. Press the "DIGIT SET" button until the 3rd digit reads "2."
 - ii. Press the "DIGIT SELECT" button one time. The 2nd digit on the screen should now be flashing. Press the "DIGIT SET" button until the 2nd digit reads "3."
 - iii. Press the "DIGIT SELECT" button one time. The 1st digit on the screen should now be flashing. Press the "DIGIT SET" button until the 1st digit reads "4." The number on the screen should now be 4320.
8. To set the Pump Period (Total number of minutes the pump will actually be running. For us, this is $1/6 * 72 \text{ hours} = 720 \text{ minutes}$):
 - a. Press the "MODE" button one time. You will see "Set Up/Pump Period" on the screen.
 - i. Press the "DIGIT SELECT" button one time. The 3rd digit on the screen should now be flashing. Press the "DIGIT SET" button until the 3rd digit reads "2."
 - ii. Press the "DIGIT SELECT" button one time. The 2nd digit on the screen should now be flashing. Press the "DIGIT SET" button until the 2nd digit reads "7." The number on the screen should now be 0720.
9. When you are ready to begin sampling, press the "START/HOLD" button one time. You should see "Sample Running" on the pump display screen.
10. Place the pump inside of the protective box, and screw on the top of the protective box. Be sure to pull the excess tubing out through the top of the box as you are closing the lid, so that the tubing does not get crimped inside of the box. When the top of the box is closed, give the tubing a gentle tug to be sure all of the excess tubing is outside of the box.
11. Transfer one (1) of the labels from the filter cassette on to the IAP logsheet under the "SKC Pump" section, and record the type of sample being collected (either "Sample," "Blank," or "Duplicate"). At this point record the current date and time under "Start Date," and "Start Time," in the "SKC Pump" Section.
12. Listen to the SKC pump. Make sure you hear the SKC pump turn on 1 more time before you leave, to be sure that it is running.

After each testing

1. At the end of testing, transfer one of the labels from the filter cassette on to the IAP log sheet.

Blank Filters

1. Place cyclone with filter close to Casella pump in the kitchen.
2. Attach label to log sheet

Stove/Fuel IAP Study L2010.99

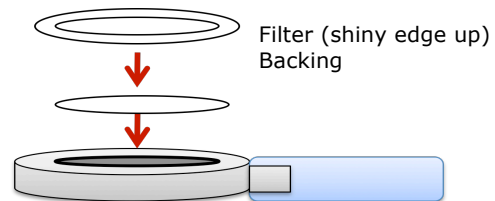
- Remove the filter at the same time you remove the Casella pump. Attach 2nd sticker to log sheet.

II. Cleaning and Maintenance

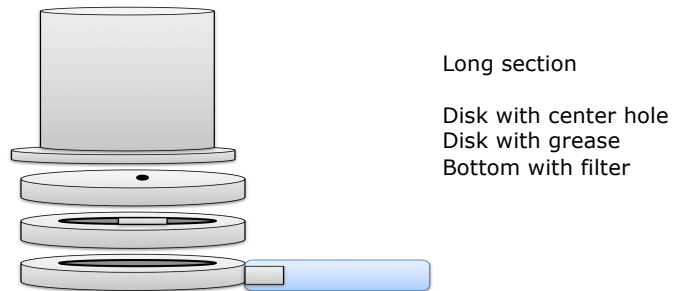
Casella Pump – Set Set Up

- Unscrew and open the pem. If the pem has not been recently cleaned, clean all surfaces with alcohol.
- Remove any dirt from the grease. Add new vacuum grease and smooth over with a razor blade. Use alcohol to carefully clean any grease off the edge.

- Open a new filter cassette. Use clean forceps to place the backing and filter on the mesh of the bottom part of the pem.



- Place the pem components together in this order:
(NOTE: line up the screw holes)



- Screw the pem together, making sure to tighten the screws on opposite sides.
- Attach the pem to the tubing connected to the Casella pump and place inside the bag. Record the flow rate on the screen (1.8 LPM) and confirm with flowmeter.

Casella Pump Cleaning

- After the pump is returned from the field, remove the pump from the bag. Test and record the flow rate.
- Remove the pem from the pump and place the pump in the charger. Leave the pump on the yellow charger for at least 24 hours.



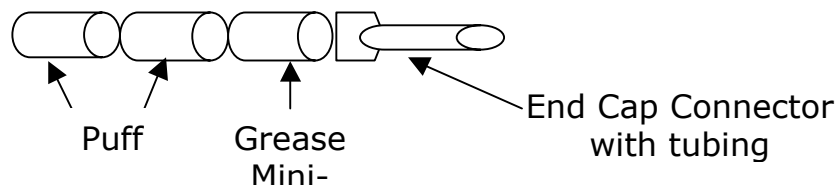
- On a clean work surface, unscrew the top of the pem. Without touching the filter, lift up the top pieces.
- Open a clear plastic filter cassette. Using a clean pair of forceps, remove the filter from the pem and place inside the plastic cassette.

Stove/Fuel IAP Study L2010.99

5. Transfer any labels on the pem to the plastic cassette with the filter and place the lid on the cassette. (NOTE: do not have more than one filter open at a time!)
6. Clean all surfaces of the pem with alcohol.

Mini-Pem Cleaning

1. Clean the mini- pems with alcohol.
2. Ensure that all pink puff mini-pems have clean pieces of pink-puff, and that all grease well mini-pems have clean, level grease.
3. Each mini-pem set should consist of two pink puff mini-pems, one grease well mini-pem, and one end cap with tubing, in that order. Attach the pink puff mini-pem to the grease well mini-pem using electrical tape. Screw the end cap with tubing to the bottom of the grease well mini-pem.



Appendix M. SOP for IAP Measurements, Questionnaire and Fuel
Distribution

Standard Operating Procedures (SOP) for
IAP measurements, Questionnaires and Fuel Distribution
Indoor Air Pollution Carriage Study

P.I. Teresa Litchfield
MRC Unit, The Gambia
SCC 1284
January 2012

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Name	Signature	Date
Author: Teresa Litchfield		
Approver:		

1. Abbreviations

IAP	Indoor Air Pollution; as related to the IAP Carriage study
LPM	Litres per minute
PM	Particulate Matter; as related to particulate matter measurements taken from the cooking area
SOP	Standard Operating Procedure

2. Background

This study was designed to assess whether:

1. Briquettes used with an improved stove reduce harmful pollutant levels in the kitchen area
2. A reduction in levels of harmful pollutants in the cooking area affects pneumococcal carriage in babies and their mothers.

3. Purpose & Scope

This SOP will be used in the IAP Carriage study, specifically for the measurement of indoor air pollution in the cooking areas, for filling out the study questionnaires and for the dissemination of the briquettes and wood to the households.

4. Principle

This SOP is designed specifically for the fieldworkers working on the IAP Carriage study. All steps should be followed closely. Any questions or matters should be address to Teresa Litchfield.

5. Safety Precautions

As there will be some heavy lifting while transporting briquettes and wood, take care that you transport these heavy items in a proper manner. All drivers and fieldworkers who will be transporting briquettes should have a short training o lifting heavy objects.

6. Equipment/Materials/Supplies/Forms

6.1. Equipment

1. SKC Pump- Portable pump used to measure PM
2. Casella Pump- Portable pump used to measure PM
3. Cyclone- Metal piece that connects cassette to hose
4. Cassette- plastic cylinder to house filter
5. Tape Measure
6. Scale (to weigh child)
7. Ruler (to measure child's height)

6.2. Forms

1. Information sheet
2. Consent Form
3. Form #1- Identification Information
4. Form #3- IAP Measurements

5. Form #4- Household Questionnaire
6. Form #6- Intervention Assessment

7. Responsible Persons

Teresa Litchfield will be responsible for assuring that the study is conducted properly. Any study questions should be addressed to her. Any questions pertaining to IAP equipment can also be address to Bunama Singhateh.

8. Procedures

8.1. General Notes

- All filters will be place into and removed from cassettes by Teresa Litchfield. Therefore, fieldworkers should have NO reason to tamper with filters.
- Always bring extra prepared cassettes into the field
- Make sure all equipment is cleaned and prepared THE NIGHT BEFORE setting it up in the field

8.2. Schedule

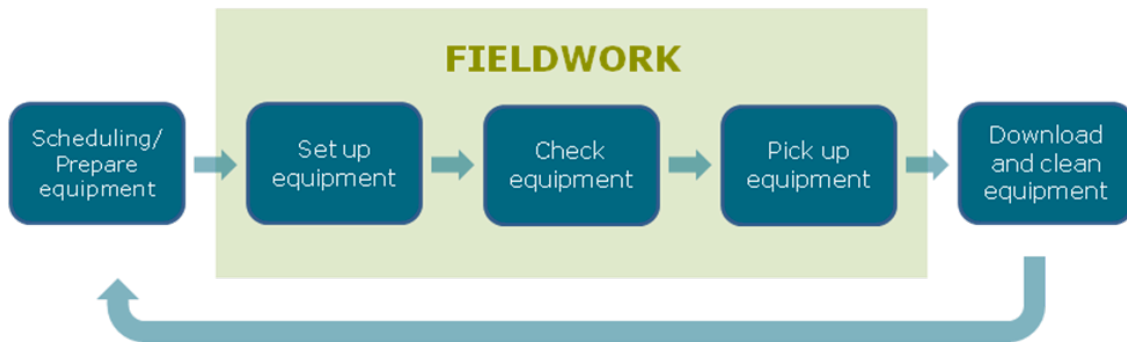
For Each Land Rover/Fieldworker: 20 IAP samples per week

	Distribute wood and Briquettes	Set up IAP pumps	Pick up IAP pumps	Clean and prepare pumps	Questionnaires
Monday	14 wood 14 briquettes	3 - 4 pumps			
Tuesday	14 wood 14 briquettes				8
Wednesday	14 wood 14 briquettes		3 - 4 pumps	3 - 4 pumps	
Thursday	14 wood 14 briquettes	3 - 4 pumps			
Friday	14 wood 14 briquettes				2
Saturday (1 fieldworker)			10 pumps	10 pumps	

8.3. Preparation (before going out each morning)

1. Pumps are charged completely
2. Pumps are at the correct flow rate
3. Hoses and cyclone are clean and assembled to pump
4. Filters are attached to cyclones
5. 2 extra filters are packed just in case
6. All folders for the participants you will be seeing that day are pulled out and ready.
This can be done in the vehicle on the way to the field
7. Questionnaires are ready
8. Check that all other equipment is there

8.4. Field Procedures for SKC and Casella pumps



8.4.1. Set-up (Mondays and Thursdays)

1. SKC pumps, Casella pumps and all necessary accessories will be prepared prior to Monday and Thursday mornings at the MRC campus. Field workers should retrieve all necessary supplies (see additional “Field Supplies Checklist” for exact list of supplies). Because filters will be attached to the cyclones, care should be taken to protect the box and filter cassette from dust. Do not remove the filter cassette from the tubing/pump box set-up.
2. Upon arrival at the sampling site, locate an appropriate location to place the pre-made wooden stand. The equipment should be placed approximately 1 meter away from the edge of the main fire in the cooking area. (Note if the cooking area is enclosed, the equipment should always be placed within the same enclosed area where cooking takes place.) Measure the distance from the wooden stand to the edge of the main fire and record on the IAP logsheet.
3. Transfer one (1) of the labels from the filter cassette on to the IAP logsheet, under the “IAP Pump” section. Also record the current date and time under pick-up date and time.
4. Use a screwdriver to open the protective box and remove the pump.

For SKC Pumps

- a. Turn the SKC Pump on using the black switch at the bottom of the control panel.
- b. Press the “START/HOLD” button one time.
- c. Press the “SET-UP” button one time. You will see “Set Up/Delayed Start” on the screen.
- d. To set the Sampling Period (Total length of the sampling period. For us, this is 48 hours = 2880 minutes):
- e. Press the “MODE” button one time. You will see “Set Up/Sample Period” on the screen.
 - i. Press the “DIGIT SELECT” button one time. The 3rd digit on the screen should now be flashing. Press the “DIGIT SET” button until the 3rd digit reads “8.”
 - ii. Press the “DIGIT SELECT” button one time. The 2nd digit on the screen should now be flashing. Press the “DIGIT SET” button until the 2nd digit reads “8.”

- iii. Press the “DIGIT SELECT” button one time. The 1st digit on the screen should now be flashing. Press the “DIGIT SET” button until the 1st digit reads “2.” The number on the screen should now be 2880.
- f. To set the Pump Period (Total number of minutes the pump will actually be running. For us, this is $1/6 * 48 \text{ hours} = 480 \text{ minutes}$):
- g. Press the “MODE” button one time. You will see “Set Up/Pump Period” on the screen.
 - i. Press the “DIGIT SELECT” button one time. The 3rd digit on the screen should now be flashing. Press the “DIGIT SET” button until the 3rd digit reads “2.”
 - ii. Press the “DIGIT SELECT” button one time. The 2nd digit on the screen should now be flashing. Press the “DIGIT SET” button until the 2nd digit reads “7.” The number on the screen should now be 0480.
- h. When you are ready to begin sampling, press the “START/HOLD” button one time. You should see “Sample Running” on the pump display screen.

For Casella Pump

- a. Turn the Casella pump on by pressing the red button.
 - b. Make sure the picture of the lock is not on the screen. If it is, press the red button 3 times quickly. Repeat until the picture of the lock is gone.
 - c. Set the flow rate to 1.80 L/min.
 - i. Press Δ once. The screen should read ‘FLOW SET.’
 - ii. Press the enter key and use the arrows to set the flow to 1.80.
 - d. Using TWA mode, the sampling (RUN) time will be set to 24 hours and the pump-on exposure (EXP) time to 3:59 hours, as follows.
 - i. Enter Configuration Mode, select Program Mode / ON and accept it. The instrument reverts to Hold Mode.
 - ii. Press \uparrow or \downarrow (arrows) several times until TWA blinks on the display.
 - iii. Press to select it.
 - iv. RUN is displayed and the run time blinks to indicate that it can be changed.
 - v. Use arrows to select a run time (**24:00**).
 - vi. Press to accept the selected run time.
 - vii. EXP is displayed, and the exposure time blinks to show it can be changed.
 - viii. Use arrows select an exposure time (**3:59**).
 - ix. Press to accept an exposure time and start sampling.
 - e. Press the enter key to begin sampling.
 - f. To lock the Casella pump, press the red button 3 times quickly. Repeat until the picture of the closed lock appears on the screen.
5. Place the pump inside of the protective box, and screw on the top of the protective box. Be sure to pull the excess tubing out through the top of the box as you are closing the lid, so that the tubing does not get crimped inside of the box. When the top of the box is closed, give the tubing a gentle tug to be sure all of the excess tubing is outside of the box.
6. Transfer one (1) of the labels from the filter cassette on to the IAP logsheet under the “IAP Pump” section, and record the type of sample being collected (either “Sample,”

“Blank,” or “Duplicate”). At this point record the current date and time under “Start Date,” and “Start Time,” in the “IAP Pump” Section.

7. Listen to the pump. Make sure you hear the pump turn on 1 more time before you leave, to be sure that it is running.

8.4.2. 24-hr Casella swap (Tuesdays and Fridays)

1. The Casella pumps will only be running for 24 hours at a time, as opposed to 48 hours for the SKC pump. Therefore, we will need to reset the pump after 24 hours.
2. Fill out Section B on the IAP log form
3. Flip the page over and fill out the Section C,
4. Turn the pump on. Follow the instructions above for the Casella pump.

8.4.3. Pick-up (Thursdays and Saturdays)

1. At the 48 hour time point (Wednesday or Saturday), the SKC or Casella pump should be collected from the subject’s home.
2. Transfer one (1) of the labels from the filter cassette on to the IAP logsheet, under the “IAP Pump” section. Also record the current date and time under pick-up date and time.
3. Transport the pump with cyclone and filter cassette attached to the MRC campus. Again, take care to protect the pump (particularly the filter cassette) during transport. The pump and filter should be transported either in the field worker’s backpack, or inside of a plastic bag. Do not remove the filter cassette from the tubing/pump box set-up.
4. Return the pump box/cyclone/filter cassette to MRC

8.4.4. Cleaning and preparing equipment after use (Thursdays and Saturdays)

Must be complete before leaving work

1. Return used cassettes to Teresa. DO NOT open and remove or tamper with filter.
2. Remove cyclone from pumps and clean with alcohol.
3. Remove hose from pump and place pump on appropriate charger. Verify charger is working by checking for light.
4. Make sure all the equipment is set for the following morning.

8.5. Field Procedures for Questionnaires

1. Make sure you have the correct form
2. Use a black or blue ink pen (not a pencil)
3. Double check that you are talking with the correct participant (participant matches study ID #)
4. Place the participant(s) study # label in the appropriate box.
5. Carefully fill out the form.
6. If there is an error made, cross it out with one line (~~example~~) and write the correct response above it. Then sign your initials next to the corrected response.
7. When taking anthropometric measurements for Form4:

- a. Weigh child in baby hanging scale. Hold only a couple of inches above a bed or soft surface
 - b. When measuring height of child, lay them on board and measure from head to toe
 - c.
8. After completing the form, double check each question to assure you have answered them correctly. Make sure there are no unanswered questions
 9. After returning to MRC, hand the form to Teresa Litchfield by the end of the day.
 10. If Teresa finds any errors, she will hand the form back to you to be corrected. This might entail returning to the participant to re-ask the question.

8.6. Field Procedure for Fuel Distribution

9. References

SCC 1284 (Project Proposal)

10. Attachments

Appendix N. SOP for Specimen Collection and Transference to Lab

**Standard Operating Procedures (SOP) for
Specimen Collection and Transference to Lab**
Indoor Air Pollution Carriage Study

P.I. Teresa Litchfield
MRC Unit, The Gambia
SCC 1284
January 2012

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Name	Signature	Date
Author: Teresa Litchfield		
Approver:		

1. Abbreviations

IAP Indoor Air Pollution; as related to the IAP Carriage study

SOP Standard Operating Procedure

2. Background

This study was designed to assess whether:

1. Briquettes used with an improved stove reduce harmful pollutant levels in the kitchen area
2. A reduction in levels of harmful pollutants in the cooking area affects pneumococcal carriage in babies and their mothers.

3. Purpose & Scope

This SOP will be used for the Nasopharyngeal Carriage component of the IAP Carriage study, specifically for the collection and transportation of nasopharyngeal swabs.

4. Principle

This SOP is designed specifically for the nurses and fieldworkers working on the IAP Carriage study. All steps should be followed closely. Any questions or matters should be addressed to Teresa Litchfield.

5. Safety Precautions

For safety purposes, handling of specimens must be with gloves at all times. Any spill of specimen on the skin should be washed immediately with running water. After cutting off the metal tip of the swab before sealing the vial, make sure to dispose of the metal tip in a designated container.

6. Equipment/Materials/Supplies/Reagents

6.1. Equipment/Materials

1. Calcium alginate tip swabs
2. STGG transport media in 1ml vials
3. Scissors
4. Alcohol
5. Cotton Swabs
6. Cold Box
7. Box to contain metal tips of swabs

6.2. Forms

1. Form #2- 1st Carriage form
2. Form #5- 2nd Carriage form
3. Participant ID labels
4. Sample labels

7. Responsible Persons

The field nurses and fieldworkers will be responsible of ensuring that the specimens are well collected according to SOP, that the specimen bottles are well covered and that all specimens are stored properly in the Cold box prior to departure from the field. The Laboratory staffs ensure that someone is always on ground to receive the specimens as soon as they arrive from the field. Teresa Litchfield will oversee these procedures for the duration of the study.

8. Procedures

8.1. Collection of Nasopharyngeal swab

1. Double check that you are talking with the correct participant (participant matches study ID #)
2. Place the mother and child's study # labels in the appropriate boxes
3. Carefully fill out the form.
4. Explain the procedure to the mother
5. Always swab the mother first. Specimen sticker must be placed in appropriate box on the form before proceeding to the child.
6. Use only the calcium alginate tip swab sticks provided for the study.
7. Tip the subject's head slightly backward and pass the swab directly backwards, parallel to the floor of the nasopharynx. The swab should pass without resistance until it reaches the posterior pharynx, which is about a half the distance from the nostril to the ear lobe.
8. If resistance is encountered, remove the swab and pass through the other nostril.
9. Once the swab is in place, leave in position for five seconds to saturate the tip before removing it slowly
10. Place the tip in a vial containing 1ml of STGG transport media. Using a pair of scissors wiped with alcohol, cut off the excess wire handle, leaving the tip in the transport media. Then tighten the cap and label the vial and place on wet ice.
11. Dispose what remains of the wire loop into "sharps" box
12. Keep a record of the presence or absence of nasal mucous and whether or not the procedure was adequately carried out.
13. Ensure that the specimen remains in a cold box with ice and is transported to the lab within eight hours of collection
14. At the laboratory (Fajara), vortex the specimen for 10-20 seconds before storing in -70°C freezer.

8.2. Handing over nasopharyngeal swab to laboratory

1. The fieldworker brings the cold box containing the specimens along with the forms and specimen records book into the laboratory.
2. The designated laboratory staff receives the cold box and the forms.

3. Together, the fieldworker and the designated laboratory staff look through the forms and specimens to ensure that
 - a. All forms clearly indicate the arm of study
 - b. Each form has its own corresponding specimen and that the sticky labels on the forms are exact duplicates of those on the specimen bottles.
 - c. All forms are properly filled.
 - d. All the specimen bottles are properly labelled and tightly shut.
 - e. Ensure the temperature of the sample is okay (cold)
 - f. If all criteria are met (3a-e) the specimen is acceptable for accession. If any criteria are not met inform field co-ordinator and the research clinician immediately
4. The fieldworker and the laboratory staff then sign the specimen records book indicating the exact number and type of specimen handed over, the time and date of handover and any other important comments.
5. Inconsistencies or any issues requiring clarification should be reported to Teresa Litchfield immediately.
6. For safety purposes, handling of specimens must be with gloves at all times. Any spill of specimen on the skin should be washed immediately with running water.

9. References

10. Attachments

Appendix O. Water Boiling Test Instructions

Water Boiling Test Instructions

At the start of each test

1. Stack three bundles of fuel for the three phases of the test
2. Weigh all bundles of fuel
3. Have fire starter material ready
4. Make sure all IAP equipment is charged and in place
5. Have 3 cyclone filters ready to replace after each phase
6. Record:
 - Air temperature
 - Wind conditions
 - Fire starter materials
 - Equipment serial numbers
7. Prepare if doing blank or duplicate

Phase I

1. Fill pot with predetermined amount of water (5 liters)
2. Take measurements
 - Weight of pot with water
 - Water temperature
3. Start fire and set timer once fire started
4. Place thermometer in pot and place pot on fire
5. When water reaches boiling point remove pot and take measurements
 - Record time
 - Remove all wood from stove and put out flames
 - Knock charcoal off wood and weigh unburned wood together with unused wood
 - Weigh pot with water
 - Extract remaining charcoal from stove and weigh with the charcoal what was knocked off wood

Phase II

1. Refill pot with fresh water
2. Take measurements
 - Weight of pot with water
 - Water temperature
3. Start fire and set timer once fire started
4. Place thermometer in pot and place on fire
5. When water reaches boiling point remove pot and take measurements
 - Record time
 - Remove all wood from stove and put out flames
 - Knock charcoal off wood and weigh unburned wood together with unused wood
 - Weigh pot with water
 - Extract remaining charcoal from stove and weight with the charcoal what was knocked off wood
6. Replace and relight the wood removed from the fire and proceed immediately with Phase III

Phase III

1. Reset timer
2. Replace thermometer in pot
3. Boil water for 45 minutes, keeping it as close as possible to 3 degrees C below the boiling point. Test will be invalid if it drops more than 6 degrees below boiling point
4. After 45 minutes, take measurements
 - Record time (should be 45 minutes)
 - Remove all wood from stove and put out flames
 - Knock charcoal off wood and weigh unburned wood together with unused wood
 - Record final water temperature
 - Weigh pot with water
 - Extract remaining charcoal from stove and weight with the charcoal what was knocked off wood

Appendix P. Controlled Cooking Test Instructions

Controlled Cooking Test Instructions

At the start of each test

1. Weigh bundle of fuel
2. Have fire starter material ready
3. Make sure all IAP equipment is charged and in place
4. Record:
 - Air temperature
 - Wind conditions
 - Fire starter materials
 - Equipment serial numbers
5. Prepare if doing blank or duplicate

Test

1. Start fire and set timer once fire started
2. Cook benechin
- 3.
4. When cooking is complete:
 - Record time
 - Remove all wood from stove and put out flames
 - Knock charcoal off wood and weigh unburned wood together with unused wood
 - Weigh pot with benechin
 - Extract remaining charcoal from stove and weight with the charcoal what was knocked off wood