

Qualitative study to identify solutions to local barriers to care-seeking and treatment for diarrhoea, malaria and pneumonia in select high burden countries

Report on findings from Niger



November 2012
Maternal, Newborn and Child Health
Working Paper
UNICEF Health Section, Program Division

unicef 
unite for children

Qualitative study to identify solutions to local barriers to care-seeking and treatment for diarrhoea, malaria and pneumonia in select high burden countries. Report on findings from Niger (1 of 3 country reports)

© United Nations Children's Fund (UNICEF), New York, 2012

Knowledge Management and Implementation Research Unit, Health Section, Program Division
UNICEF
3 UN Plaza, New York, NY 10017
November 2012

This is a working document. It has been prepared to facilitate the exchange of knowledge and to stimulate discussion.

The findings, interpretations and conclusions expressed in this paper are those of the authors and do not necessarily reflect the policies or views of UNICEF or of the United Nations.

The text has not been edited to official publication standards, and UNICEF accepts no responsibility for errors.

The designations in this publication do not imply an opinion on legal status of any country or territory, or of its authorities, or the delimitation of frontiers.

The editors of the series are Theresa Diaz, Julia Kim and Alyssa Sharkey of UNICEF Program Division. For more information on the series, or to submit a working paper, please contact tdiaz@unicef.org, jukim@unicef.org or asharkey@unicef.org.

PHOTOGRAPHS: Children and parents in Madarounfa, Maradi and Kollo, Tillabéri, Niger
by Juliet Bedford © Anthrologica Ltd 2012.



MATERNAL, NEWBORN AND CHILD HEALTH WORKING PAPER

November 2012

Qualitative study to identify solutions to local barriers to care-seeking and treatment for diarrhoea, malaria and pneumonia in select high burden countries

Report on findings from Niger
(1 of 3 country reports)

Juliet Bedford

Anthrologica

www.anthrologica.com

Keywords: Africa, Kenya, Nigeria, Niger, community case management, care-seeking, treatment, diarrhoea, malaria, pneumonia, child health

Comments may be addressed by email to Juliet Bedford: julietbedford@anthrologica.com
cc: asharkey@unicef.org, myoung@unicef.org and tdiaz@unicef.org

Acknowledgements

We would like to thank the Ministry of Health for permission to undertake this study. We are grateful for the support of the District Health Teams in Madarounfa, Maradi and Kollo, Tillabéri and thank Dr Hassane Boureima in Madarounfa and Dr Sadam Kalitou Moussa in Kollo for their assistance. From the UNICEF country office in Niamey, particular thanks are extended to Adama Ouédraogo and Khaled Bensaid. We would also like to thank Ousmane Niang, Rocio Berzal, Fatima Hacıhou and Roseline Araman. From the UNICEF regional office in Maradi, we thank Mohameden Fall, Amadou Oumarou, Hassane Hamidine and Chetima Moustapha. From UNICEF Head Quarters in New York, we thank Mark Young, Nick Oliphant, Thomas O’Connell, Deolinda Martins and Natalia Winder Rossi for their positive engagement and ideas, and Shanelle County and Paola Canahuati for their logistical support. We are particularly grateful to Alyssa Sharkey for her commitment, patience and good humour throughout.

We thank research assistants Rahila Aboubakar, Kadidiatou Hassane Moumoni and Yacouba Mahamane Kakale for their invaluable contributions to the study, and Anthrologica associates Olivia Tulloch and Benj Conway. Particular gratitude is extended to the mothers, families and health workers who participated in this research.

The research was made possible by a grant from the Bill and Melinda Gates Foundation.

Table of Contents

Executive Summary	7
Abbreviations	14
Introduction.....	15
Research brief and objectives	15
Situational analysis	16
Methodology	17
Research team	17
Study site	18
Participants and recruitment.....	18
Data collection.....	19
Data analysis.....	20
Methodological limitations.....	20
Report structure	21
Results and thematic analysis.....	23
Demographic details.....	23
Causation and prevention	25
Malaria.....	25
Diarrhoea.....	29
Pneumonia.....	31
Local theories of causation	33
Care-seeking behaviour.....	33
Plant medicine	33
Traditional and spiritual healers.....	36
Other local treatments	39
Pharmacies, chemists and medicine vendors.....	40
Health facilities	44
Decision making and agency to act	46
Pathways of care	48
Community perceptions of changes in child mortality rates.....	50
Barriers to care-seeking and treatment	55
Financial barriers	55
Access barriers (distance, transport and location)	57
Knowledge and information barriers	58
Socio-cultural and religious barriers.....	59
Health facility deterrents.....	60
Solutions to barriers identified	63
Solutions to financial barriers.....	63
Solutions to access barriers	64
Solutions to knowledge and information barriers.....	64
Solutions to socio-cultural and religious barriers	66
Solutions to health facility deterrents	67

Discussion and implications.....	72
Conclusion	79
Appendix 1 – Map of fieldsites	80
Niger	80
Region of Maradi	81
District of Madarounfa	81
Region of Tillabéri.....	82
District of Kollo	82
Appendix 2 – Methodological tools.....	83
Topic Guide.....	83
Interview framework – carers of children under 5 years old	84
Focus group discussion framework – fathers of children under 5 years old	86
Focus group discussion – health workers	88
Appendix 3 – Consent form	90
Maradi – English language version	90
Maradi – Hausa language version	91
Tillabéri – English language version.....	92
Tillabéri – Djerma language version	93
References.....	94

Tables and diagrams

Table 1 – Summary of community identified barriers and solutions suggested	70
Table 2 – Summary of policy/programmatic implications and action points.....	76
Diagram 1 – Pathways of care, Madarounfa and Kollo	49
Diagram 2 – Community perceptions of changes in child mortality rates, Madarounfa.....	51
Diagram 3 – Community perceptions of changes in child mortality rates, Kollo	52
Diagram 4 – Framework of demand-side barriers.....	73

Executive Summary

Background and objectives

UNICEF is a member of the UN Commission on Life-Saving Commodities for Women and Children, a consortium convened to recommend innovative strategies for increasing the availability, accessibility and rational utilisation of selected commodities for maternal and child health. A key aspect of this involves developing strategies to raise awareness of and strengthen demand for lifesaving products amongst end users. Against this backdrop, this research focuses on solutions to local barriers to care-seeking and treatment for malaria, diarrhoea and pneumonia identified in three select high burden countries: Kenya, Nigeria and Niger. The research has three main objectives:

- To access perceptions and experiences of childhood malaria, diarrhoea and pneumonia and associated care-seeking and treatment (non-)uptake.
- To determine the barriers and challenges intended beneficiaries face in accessing treatment for malaria, diarrhoea and pneumonia in children under five years.
- To identify local solutions to overcome barriers identified that promote and facilitate more timely access to appropriate healthcare for these childhood illnesses.

Methodology

This report appertains solely to the research conducted in Niger. Data collection was carried out over ten days in August 2012 in two regions: Madarounfa in Maradi and Kollo in Tillabéri. In Madarounfa, five villages were visited: Soumarana, Bargaja, Dan Mazadou, Radi and Samia. In Kollo, four villages were visited: Goubé, Bokotchilli, Bartchawal and Lelehi Mamane Gnalli. Primary carers of children under five years who did not (regularly) engage with health services or present their child at a health facility during illness episodes were purposively selected for interview. In Madarounfa, 12 interviews with primary caregivers were completed, and two focus group discussions, one with fathers, the other with health workers. In Kollo, 11 interviews with primary caregivers were completed and a focus group discussion with fathers. All interviews and FGDs were conducted by the English-speaking primary investigator with a research assistant translating consecutively between English and Hausa in Madarounfa, and English and Djermá in Kollo. Each interview lasted approximately 90 minutes and audio recordings were made using a digital voice recorder. Informed consent was given by signature or thumbprint of all those participating. The primary researcher was responsible for the complete thematic analysis of the data using grounded theory.

Report structure

The report is presented in three sections: results and thematic analysis (organised around causation and prevention, and care-seeking behaviour); barriers and solutions to care-seeking and treatment (including a table summary); discussion, conclusion and programmatic implications.

- **Causation and prevention**

Malaria – In both Maradi and Tillabéri, malaria was routinely listed by respondents as the main cause of childhood illness. In both districts, the causal link between malaria and mosquitoes was well known. The majority of respondents concluded that malaria was prevented by the use of bed nets, although many interviewees used the nets primarily to stop being bitten, rather than to stop contracting malaria. The majority of interviewees had two nets per household, obtained through free distribution, but it was emphasised that this was not enough to protect the whole family. Interviewees who claimed there was no way to prevent malaria were in the minority, and, as with other illnesses, often related it to the Will of Allah. In general, respondents in Madarounfa appeared to have more information about the prevention of malaria than in Kollo.

Diarrhoea – Mothers in both districts claimed that it was not a serious problem and that it was normal for young children to get diarrhoea. The main cause of diarrhoea in younger children was teething, whilst in older children, it was frequently attributed to a dirty environment. Hunger, lack of food and malnutrition were also seen to cause diarrhoea in both children and adults. Diarrhoea was often discussed as a symptom of other illnesses, arising particularly from fevers, rather than being viewed as a health problem in its own right. Again, the occurrence and prevention of diarrhoea was often linked to the Will of Allah. Mothers in Kollo were more vocal about prevention strategies for diarrhoea than those in Madarounfa. Household water sources, sanitation and hygiene were discussed.

Pneumonia – Pneumonia was closely associated with the cold. It was discussed using a combination of definitions focusing on symptoms relating to cough or cold in the chest or ribs. The descriptions often generalised a range of respiratory conditions including common colds and flu, which may account for why the majority of mothers interviewed in Kollo claimed their child had experienced pneumonia.

Local theories of causation – The occurrence of illness was frequently associated with the Will of Allah, and this determined the presentation and seriousness of a condition, influenced prevention strategies and controlled the outcome and effectiveness of medication. Although spirit attacks and evil were discussed as causes of other illnesses, malaria, diarrhoea and pneumonia were not readily associated with local theories of causation unless the condition became worse, developed unusual symptoms, or if biomedical treatment was thought to be ineffective.

- **Care-seeking behaviour**

Plant medicine – In both districts, local plant medicine was used in the treatment of malaria, diarrhoea and, to a lesser extent, pneumonia. Medicines were made from the leaves, root or bark of trees, the plant material usually being crushed and mixed with hot or cold water and then drunk. If a breastfeeding child was ill, it was common for the mother to drink the medicine herself, rather than giving it directly to the child. Although many respondents still used local plant medicine, it was generally perceived to be a practice of older people and only a small number considered passing that knowledge onto their children. Several respondents still perceived the use of plant medicine to be the appropriate front line remedy for some illnesses, particularly diarrhoea and stomach ache. For others, its use was linked to their lack of immediate access to health services, either because of distance or financial barriers. There was a definite preference in both Kollo and Madarounfa to

attend the health post first, and revert to local plant medicine if the 'white man's medicine' was not effective.

Traditional and spiritual healers – Terms for traditional and spiritual healers were used interchangeably and both used a combination of herbs, communication with spirits, and in some cases, animal sacrifice, to cure illness. Several participants sought protection from these healers and it was common to see children wearing talismans. Participants frequently visited Muslim malams for healing and blessing, particularly for headaches, if their symptoms appeared to be unusual or, most commonly, if the child was scared or afraid. Traditional and spiritual healers, and Muslim malams were important aspects of local care-seeking behaviour, however their direct involvement with clear and uncomplicated cases of malaria, diarrhoea and pneumonia was limited.

Other local treatments – Massage was mainly used to treat pneumonia, and appeared to be more common in Madarounfa than Kollo where it was usually practised by older women or malams. Other practices including tooth bud removal and tonsil snipping were raised by health workers, who also confirmed that in cases of burns, patients were referred to the blacksmith rather than being treated at the health facility.

Pharmacies, chemists and medicine vendors – Biomedicine was available from a range of 'informal' vendors in both Madarounfa and Kollo including shops, trading stores and 'bicycle chemists', who moved from village to village on motorbikes or pedal bikes selling a wide range of pharmaceuticals. Some respondents presented at the shop or vendor to describe the symptoms, others purchased the medicine they thought best fitted their child's symptoms. Such self-diagnosis raised risks of misdiagnosis, mistreatment and incorrect dosage, as carers would only buy the quantity of medicine they could afford. Several respondents claimed to avoid informal vendors as they had no training, and did not 'trust' the medicine as it may be expired or past its best before date. Although interviewees recognised such risks, for many obtaining medicine from a chemist or vendor was their first treatment option, as it provided a quick and convenient solution. Prescriptions, routinely issued by a health facility if there was a stock-out of free medicines, had to be presented at a pharmacy in town, and access to medication was then dependent on the feasibility and likelihood of access, in terms of cost, transport and distance from home to the pharmacy. Frequently, parents did not act upon a prescription, and the child would be left with partial or no treatment.

Health facilities – Respondents demonstrated an overtly positive attitude towards health facilities and biomedical services. The study attempted to identify and purposively select participants who did not interact with health services for child illness, yet all participants had presented at the health post or health centre at some point in their medical history and were engaged with biomedicine, even if they did not routinely attend clinics for child illness. Medicine and health services were seen, in general, to have had a positive impact, bringing improvements in health and well-being to the community. In a number of villages in both Madarounfa and Kollo, community members expressed a choice of health facility, and distance, area, likelihood of immediate treatment, and type of treatment were influential factors. All participants knew that medicine was supposed to be free for pregnant women and children under five. Whilst the majority acknowledged that free medicine encouraged their attendance, many also concluded that their care-seeking behaviour was different for children over five, whom they were less likely to present at a health facility.

Decision making and agency to act – It was usually the mother, as primary carer, who first noticed a child was ill, and informed the father. In terms of treatment-seeking, in the majority of cases, it was the mother who presented the child at a health facility. In general, fathers were supportive of health

facility attendance in both Madarounfa and Kollo and several commented that it was their 'duty' or 'obligation' to enable a child to receive treatment. The decision to seek treatment was usually that of the father or household head, and was part of the accepted decision-making paradigm. The majority of mothers interviewed had to seek permission to leave the family compound, to attend a health facility or otherwise. Asking permission was also closely related to financial considerations in seeking care. Many mothers explained that their husband was happy for them to seek treatment when it was free, but that problems arose when money was required, either for transport, to buy medicine on prescription, or for the care of a child above the age of five.

Community perceptions of child mortality – Many interviewees recognised a decrease in the rate of child mortality. Reasons given by way of explanation included: increased access to medicine and health facilities; increased knowledge and information about appropriate care-seeking including community health education offered by health workers; increased access to bed nets; the Will of Allah; and for one mother, the polio vaccine. Despite participants stressing their lack of access to free medicine (due to stock-outs at the health posts), they repeatedly suggested 'improved access to medicine' as a factor contributing to the reduction in child mortality. It appears that the policy of free treatment for pregnant women and children under five being in place and being widely known, is a positive determinant in itself, although it may contradict an individual's own experience of stock-outs resulting in their limited access to and uptake of medicine.

- **Barriers to care-seeking and treatment**

Financial barriers – Unless there was a health post in the village with a reliable supply of free medicine, financial constraints remained a major barrier to care-seeking. Despite the national policy of free drugs at the point of service delivery for children under five and pregnant women, there was frequently lack of stock and carers had to buy medicine on prescription. For carers who lived in a village without a health post and those given a prescription, financial outlay was required to cover transport and medicine costs. Several carers reported the need to have 'money in hand' to attend a health post, and suggested that they rarely considered presenting the child if they had no money. Although some mothers received gifts of money or cash distributions, for many, there was no possibility of borrowing money, as they had no means of repaying the credit. Frequently, the lack of financial capacity resulted in children not receiving biomedical treatment.

Access barriers (distance, transport and location) – For villages that had a health post within their locality, access to a health facility was unproblematic, and was rarely identified by the community as a barrier to care-seeking. For those who lived in villages without a health post, however, issues of distance, transport and location were frequently emphasised by participants. The majority of respondents walked to their closest health facility. Others hired a motorbike or a shared car, but then had to factor in the cost of transport to access healthcare. Modes of transport that did not include financial outlay included bicycles and ox carts. In addition to transport, distance and location also caused concern, particularly if children were ill at night, when parents had to wait until the next morning to access health services. Several respondents discussed children dying during lengthy journeys to a health facility, although such accounts were generally framed in terms of poor judgement leading to delayed presentation. There was limited outreach to communities without a health post and many carers expressed their desire to have a more accessible health post that was closer to the village.

Knowledge and information barriers – Knowledge and information about specific conditions was reasonable in both districts, although the relationship between diarrhoea, hygiene and sanitation was weak, and participants knew less about pneumonia than other conditions. Health posts were the main source of health education for many, although a number of interviewees suggested knowledge from Allah, or instinctively as a mother. When discussing more formal health education gatherings, several mothers commented that they were not conducive environments to learn: some women were not able to attend; it was difficult to hear the speaker over the noise of the collected women; and some women were shy or intimidated to participate. In villages where there were no *relais* (community health volunteers), particularly in Kollo, the difference in the level of knowledge expressed by the mothers interviewed was noticeably lower. The majority of respondents stressed their need for further information and health education and there was limited health education targeted at men. The research team only encountered one male *relais*.

Socio-cultural and religious barriers – The restricted movement of women was not regarded by participants as a major barrier to care-seeking as male household heads usually gave permission for the mothers and children to attend the health post. They did not, however, always give the support required to enable attendance. Both mothers and health workers commented that fathers sometimes displayed little responsibility for their child's health, because, socially and culturally, the mother was the primary care-giver. Whilst this was not generalisable, and many fathers were actively engaged with their family's wellbeing, a number of respondents suggested that the division of roles was problematic. Health workers also discussed 'traditional' practices and faith in local healers as barriers to timely care-seeking. This was less evident in the interviewee's narratives, for whom the use of plant medicine and informal medicine vendors was often a pragmatic alternative to the challenges of accessing a health facility and obtaining medicine on prescription.

Health facility deterrents – The dominant problem, repeatedly emphasised by participants in both interviews and focus group discussions, was the lack of free medicine at the health posts. Although staff attitudes and waiting times were not deterrents to health facility attendance, several mothers commented that the health posts were understaffed, offered limited services and that opening times restricted access, particularly at night. Health workers suggested factors that compromised their service delivery including remote or inadequate accommodation far from the health post; a lack of resources and transport for outreach services (including vaccination campaigns); and limited refresher training, something requested by all *relais*. In addition to the frequent stock-outs of essential medicine, other supply-side issues, primarily a lack of equipment, such as rapid diagnostic kits, were also stressed by health workers. They found it difficult to match patient expectations, for example, in relation to the distribution of bed nets to pregnant mothers, and regarded this as a deterrent to the community's willingness to engage with the health post.

- **Solutions to barriers identified**

Solutions to financial barriers – For many carers, engagement with the monetary economy was a continuous struggle and the possibility of saving money or contributing to a community funding scheme, to access healthcare or otherwise, was impossible. Only a couple of mothers discussed cash distributions, and none suggested this as a way of overcoming their financial constraints. The only solution to financial barriers forwarded by participants, both mothers, fathers and health workers, was the economic empowerment of women. There were concerns that any money earned would immediately be absorbed into general household funds, but several mothers who were already

engaged in small-scale business discussed having their own money and being free to spend it on essential items, including a child's healthcare, as she saw appropriate. Other respondents suggested that even if a mother's money were absorbed, the level of household income would rise, and therefore financial barriers may ease. In Madarounfa, small-scale business for women was raised as a solution to financial constraints more often than in Kollo. This may be due, in part, to UNICEF's community for development work in Maradi, one aspect of which is women's economic empowerment. Hausa were also perceived to be more business orientated than Djerma speaking peoples.

Solutions to access barriers – For villages with no health post, carers stressed the obvious solution to access barriers was to establish a health post in the immediate vicinity. Many participants also emphasised that a reliable supply of free medicine at the health posts would overcome challenges of access associated with the onwards referral to a pharmacy to collect medicine from prescription. No participant discussed improving methods of transport to overcome barriers of access, but several emphasised the need to expand routine outreach services and improve the support for health workers to provide these services as a counterpoint to issues of distance, location and transport limitations. Similarly, the role of the *relais* was raised by carers and health workers in both districts as an aspect of better integrating care into the community, thereby minimising barriers of access. In this model, *relais* would continue to provide health education and support, but their role would be developed to include tracing and follow up, and to actively encourage uptake of health services.

Solutions to knowledge and information barriers – The need for health education was repeatedly stated by carers and participants' solutions to knowledge and information barriers rested at a community level. It was suggested that specific health education activities be targeted at fathers and household heads. For women's education, house-to-house was seen to be the most conducive format for learning, and participants made it clear that men and women should be taught separately. The need to be given education at regular intervals was also stressed. In overcoming knowledge and information barriers, *relais* were seen have the potential to make particular impact. They were important sources of information and seen by participants to be very helpful, both in terms of delivering key messages, and supporting care giving and care-seeking. Health workers also emphasised their positive role in encouraging good health practices and appropriate care-seeking behaviour. The research team only encountered one male *relais*, and it was suggested by several respondents that recruiting and training more male *relais* may help direct engagement with fathers and household heads, and would also provide a positive role model for male members of the community. Participants from villages that did not have active *relais*, particularly in Kollo (where community volunteers like *relais* were less evident), all confirmed that having *relais*, with or without a health post in the vicinity, would be of huge benefit to the community.

Solutions to socio-cultural and religious barriers – Participants saw a direct link between improvements in knowledge and information at the community level and solving socio-cultural and religious barriers. They emphasised that men should be encouraged to take responsibility and provide adequately for their wives and children, and that this should happen in parallel to the empowerment of women, both socially and financially. In this way, men would be 'sensitised' to the health needs of their family, and would permit and support their wives to attend the health post. Other suggestions to mitigate socio-cultural barriers included greater involvement of the village chief and local leadership structures, and 'leading by example'. Participants also stressed the need to encourage health facility attendance whilst educating the community not to be reliant on local healing practices such as plant medicine or traditional and spiritual healers.

Solutions to health facility deterrents – Solutions to overcome health facility deterrents focused on two related aspects: improving patient experience and improving service delivery. In both areas, carers and health workers alike prioritised the need for a reliable supply of drugs at the health post, particularly free medicine for children under five. Community investment in the health post was also seen to be highly beneficial. Health workers stressed that having a reliable supply of bed nets to distribute at the health post, would help match mothers' expectations and several respondents discussed the need to introduce incentives (such as plumpy'nut distribution) to encourage attendance. To overcome the limited operational hours and lack of service at night, participants suggested that suitable accommodation be built for the health worker close to the health post, to enable them to be 'on hand'. Providing adequate resources to health workers (accommodation and transport for outreach), and to *relais* (remuneration and training), were seen to be ways to improve morale amongst health staff and improve service delivery.

- **Conclusion and programmatic implications**

UNICEF intends that the UN Commission on Life-Saving Commodities for Women and Children use the empirical evidence this research has generated to recommend innovative strategies that raise awareness of, and strengthen demand for, lifesaving products among end users. In line with UNICEF's mission to achieve equity for, and realise the rights of, the world's most marginalised children, a number of key implications for policy and programming in Niger are highlighted in relation to communication for development, financial and social protection, the expansion of health posts and network of *relais*, and supply-side interventions. These are summarised in a table of action points at the end of the discussion. This research has shown that communities in Niger value medical services and if they can access facilities and lifesaving commodities, then they are likely to utilise them. Such positive engagement suggests that if Niger and its partners can combine resources and expertise, they can make a significant and positive impact on the health and survival of the most disadvantaged women and children, and Niger can continue to accelerate progress towards achieving its Millennium Development Goals.

Abbreviations

ANC	Ante-natal care
C4D	Communication for development
CFA	West African Franc
CAQDAS	Computer-assisted qualitative data analysis software
FGD	Focus group discussion
iCCM	Integrated community case management
IMCI	Integrated management of childhood illness
KFP	Key family practices
LLITN	Long lasting insecticidal treated nets
MDG	Millennium development goal
ORS	Oral rehydration salts
SNIS	Système National d'Information Sanitaire (Niger health Information System)
UNICEF	United Nations Children's Fund

Introduction

The United Nations Secretary-General's *Global Strategy for Women's and Children's Health* highlights the inequitable access to life-saving medicines and health supplies suffered by women and children around the world and calls on the global community to work together to save 16 million lives by 2015 [1]. This challenge was taken up the UN Commission on Life-Saving Commodities for Women and Children, part of the Every Woman, Every Child movement [2]. The Commission was convened to recommend innovative strategies for increasing the availability, accessibility and rational utilisation of select life-saving commodities in 50 of the world's poorest countries that account for more than 80% of all maternal and child deaths.

Evidence from developing countries suggests that, in addition to overarching health system and financial impediments for both governments and end-users, three main obstacles prevent women and children from accessing and using appropriate commodities: the insufficient supply of high quality health commodities; the inability to effectively regulate these quality commodities; and the lack of access and awareness of how, why and when to use them, resulting in limited demand [2]. A key aspect of increasing access to simple life-saving commodities therefore involves developing strategies to raise awareness of, and strengthen demand for, these products among end users (as outlined in Commission's seventh recommendation: demand and utilisation) [3].

Against this backdrop, UNICEF, as co-host of the UN Commission during the initial phase of work, commissioned this research to focus on solutions to local barriers to care-seeking and treatment for malaria, diarrhoea and pneumonia in three select high burden countries: Kenya, Nigeria and Niger.

Malaria, diarrhoea and pneumonia remain the three largest killers of children and together account for approximately half of all child deaths during the post-neonatal period (ages 29 days to 5 years). Globally, they pose significant problems, particularly in communities with high rates of under-five mortality, and place a huge burden on families and communities, often the poorest and most vulnerable, and on health services functioning in resource-scarce settings.

Simple, inexpensive treatments are available for malaria, diarrhoea and pneumonia, and in many countries, including Kenya, Nigeria and Niger, efforts are being made to expand access. Yet, too few children receive appropriate and timely care due to problems relating to the supply of commodities and quality of services provided, in addition to issues relating to access to, poor demand for, and utilisation of, effective healthcare. As a result, high rates of childhood morbidity and mortality continue and for certain countries, have a negative impact on their ability to achieve their Millennium Development Goals (MDGs), particularly targets for Goals 4 and 5.

Research brief and objectives

UNICEF is therefore seeking an in-depth understanding of barriers to demand with the aim of developing context-specific strategies to address barriers identified. Building on previous work, including the systematic review of qualitative evidence from sub-Saharan Africa on household

recognition and response to childhood malaria, pneumonia and diarrhoea [4] and a desk review of published and grey literature relating to barriers to care-seeking in high burden countries [5], the current research is an in-depth qualitative study to identify solutions to local barriers to care-seeking and treatment uptake for diarrhoea, malaria and pneumonia in Kenya, Nigeria and Niger. Because of the lack of data available from the remote areas of the target countries, the study also provides new empirical evidence regarding demand-side barriers.

The research has three main objectives:

- To assess perceptions and experiences of childhood malaria, diarrhoea and pneumonia and associated care-seeking and treatment (non-)uptake.
- To determine the barriers and challenges intended beneficiaries face in accessing treatment for malaria, diarrhoea and pneumonia in children under five years.
- To identify local solutions to overcome barriers identified that promote and facilitate more timely access to appropriate healthcare for these childhood illnesses.

This report focuses solely on the research undertaken in Niger.

Situational analysis

Niger is one of the poorest countries in the world, ranking 186/187 in the 2011 Human Development Index [6]. The Sahara Desert covers 80% of the country, and 75% of the estimated 15 million population live in five of the country's eight administrative regions, in the south and west [7]. 65.9% of the population live with less than USD1.25 per day, the World Bank definition of extreme poverty [8]. Fertility rates remain high at 7.1 children per woman [9] and only 38% of the poorest quintile of the population have access to healthcare [10].

Despite this, and in contrast to neighbouring countries, Niger has achieved significant results in lowering the rate of under-five mortality. According to Countdown to 2015 for Maternal, Newborn and Child Survival, Niger is amongst 23 of the 74 Countdown countries on track to achieve its MDG 4, an under-five mortality rate of 109 per 1000 live births by 2015 [11]. In Niger, the under-five mortality rate has fallen 43% in a decade, from 226 per 1,000 in 1998 to 128 per 1,000 in 2009, an annual decline of 5.1% that exceeds the 4.3% rate of decline needed to achieve MDG 4 [12].

The reasons for this decline have been analysed in depth, but the dramatic increase in coverage of high-impact child survival interventions in the past decade is significant [12]. Three converging aspects are noteworthy. Firstly, the increase in the provision of services. Although Integrated Management of Childhood Illness (IMCI) was adopted nationally in the mid-1990s, the policy was revised in 2005, and in 2008 community health workers in public posts were authorised to provide Integrated Community Case Management (iCCM) for childhood fever/malaria, diarrhoea and pneumonia. Secondly, the increase in financial access to services through the Government's provision of free healthcare to all pregnant women and children under five since 2006. Thirdly, improvement in geographic access to services with the development of a network of health posts (*case de santé*) in villages with a population of at least 5,000 in a range of 5km that did not already have a health facility

and were located over 10km from an integrated health centre (*centre de santé intégré*) [13]. By 2010, 2,493 health posts had been constructed [14]. An assessment of the implementation of a minimum care package for health posts in 2011 indicated that the proportion of the population living within 5km of a health post or integrated health centre has increased from 48% in 2000 to 80% in 2007 [15]. By 2010, over 1600 health workers had been trained in clinical IMCI [13] and *relais* or volunteers (also known as *agents de santé communautaire* or community health agents) had been recruited to work at the community level [13].

Data from the Système National d'Information Sanitaire (SNIS, Niger Health Information System) indicates an increase in the utilisation of health services during this period for malaria, diarrhoea and pneumonia. The demand for treatment for malaria, for example, increased from 44% in 2006 to 77.6% in 2010 [13]. Among the 77.6% of children in need of curative healthcare, however, only 60% were treated in 2010, meaning that the remaining 40% could not or did not attend appropriate health services [13], and despite the impressive reduction in under-five mortality, changes in the rates of neo-natal mortality and maternal mortality remain insignificant. In 2011, one in twenty women in Niger was at risk of dying from maternal causes during the age of procreation [13]. Challenges and barriers to effective care-seeking remain.

There are regional disparities in the coverage and uptake of health services. Because of this, and ongoing programmatic and technical investment, UNICEF identified two areas in which to focus this qualitative research: Madarounfa district in the region of Maradi; and Kollo district in the region of Tillabéri. These sites were selected to provide understanding across a range of health system performance contexts. Maradi borders with Nigeria with a 2012 population of 3,217,094 [16]. In Madarounfa, the population is 419,325, including an under-five population of 83,497 [16]. Maradi had the highest under-five mortality rate of all regions of Niger in 1998, but has seen the most rapid improvement due to investments in the health system [17]. Tillabéri borders with Mali and Burkina Faso and has a 2012 population of 2,645,215. In Kollo, the population is 455,969, with an under-five population of 84,525 [16]. In comparison to Maradi, Tillabéri had a lower under-five mortality rate and better access to many key child health interventions, but has seen slower improvements over the same period.

Methodology

The research was conducted in line with prevailing ethical principles to protect the rights and welfare of all participants. Permission to undertake the research was granted by the Ministry of Health of Niger. It was supported by the District Health Teams in Madarounfa, Maradi and Kollo, Tillabéri and by the UNICEF country office in Niamey and regional office in Maradi.

Research team

The research team consisted of Dr Juliet Bedford, the Director of Anthrologica, who as the primary investigator led the research, supported by three Nigérien research assistants, Rahila Aboubakar (in Maradi) and Kadidiatou Hassane Moumoni (in Tillabéri) who participated in the interviews and focus group discussions as joint facilitator and translator and were also responsible for transcribing the

audio recordings of interviews and discussions held, supported by Yacouba Mahamane Kakale (in Niamey). Logistical support was provided by UNICEF. Additional analysis was undertaken at the conclusion of the research by Dr Olivia Tulloch, an Anthrologica Research Associate.

Study site

Data collection was carried out over ten days in August 2012 in two regions: Maradi and Tillabéri. Specific fieldsites were agreed in collaboration with the District Health Teams of Madarounfa, Maradi and Kollo, Tillabéri (see Appendix 1).

In Madarounfa, five villages were visited: Soumarana, Bargaja, Dan Mazadou, Radi and Samia. Three villages, Soumarana, Dan Mazadou and Radi, each had a health post (*case de santé*) with active *relais* (volunteers). The health post in Soumarana, in the commune of Safo, was established in 2005. It covers five villages and has a catchment population of 6,908. In Dan Mazadou, the health post was built in 2005. It covers 11 villages in the commune of Serkin Yamma and has a catchment population of 6,916. Respondents in Dan Mazadou also reported using the integrated health centre (*centre de santé intégré*) in Sarkin Yamma. The health post in Radi was built in 2005 and covers five villages with a population of 10,585. Respondents in Radi also used health facilities in Maradi. With no health post in Bargaja, respondents reported using the integrated health centre in Togarawa (in Madaoua district) or the district hospital in Madarounfa. In Samia, respondents used the integrated health centre in Kurya or larger health facilities in Maradi.

In Kollo, four villages were visited: Goubé, Bokotchilli, Bartchawal and Lelehi Mamane Gnalli. Goubé and Bartchawal both had a health post. The health post at Goubé was built in 2002 and serves a catchment population of 5,658, covering four villages and five hamlets, but there were no active *relais*. In addition to their health post, respondents in Goubé also reported attending the integrated health centre at Kone Beri and health facilities in Niamey. In Bartchawal, the health post was built in 2008 and covers seven villages with a catchment population of 3,150. There are *relais* in each quarter of the village, usually traditional midwives with some basic training. Neither Bokotchilli nor Lelehi Mamane Gnalli had a health post. Bokotchilli has a population of 1,090. Their designated health post is at Kina Koira and their referral health centre is at Kouré. In Lelehi Mamane Gnalli the population numbers 1,162. According to the District Health Team, their designated health post is listed as Doga and their referral integrated health centre as Youri, however respondents did not discuss either of these facilities, but attended Saguia integrated health centre instead.

Participants and recruitment

The District Health Teams in Madarounfa and Kollo contacted health personnel at the health post and/or the chief of each selected village in preparation for our visit. Various community members facilitated the team's introduction to carers of children under five years old. In a number of cases, the facilitator had made prior contact with the primary carer to seek informal permission for the research team to visit their home. In Madarounfa, in villages with a health post, the research team worked with the nominated *relais* who introduced us to the community. In Bargaja, we were accompanied by a senior *ungozama* (traditional midwife), and in Samia by the wife of the village chief. In Kollo, we

were accompanied by a community volunteer in Bartcahawal, but the health post in Goubé lacked *relais* so we were introduced to that community by the president and treasurer of the health post committee. In Bokotchilli, the fathers who participated in the focus group introduced us to potential interviewees that had been pre-selected by the village chief, and in Lelehi Mamane Gnalli, the chief nominated his daughter and two of her friends to lead us through the community.

Primary carers of children under five years who did not (regularly) engage with health services or present their child at the health facility during illness episodes were purposively selected for interview. In Madarounfa, 12 interviews, and in Kollo 11 interviews with primary caregivers were completed. Three structured focus group discussions (FGDs) were held. An FGD with fathers was held in each district (in Radi, Madarounfa, and in Bokotchilli, Kollo), plus an FGD with health workers in Madarounfa. This brought together the community nurse and *relais* from the three villages with a health post where the research team had worked in Maradi. An FGD with health workers in Kollo was not facilitated because in three of the four villages visited, community members rather than health workers introduced the research team.

Data collection

Based upon the literature reviews undertaken prior to the start of this research [4,5] the primary researcher devised a series of methodological tools including a topic guide that highlighted key issues and was the basis for the design of the semi-structure interview framework and FGD frameworks, that included a broad spectrum of research questions and probes (see Appendix 2). Specific questions and probes were reviewed and refined during the research period in light of themes arising. Although the direction of each interview was determined by the interviewee and largely focused on issues they self-prioritised (rather than on what the research team may have presupposed to be important), the key topics were addressed in each interview and therefore allowed generalisation of themes across participants.

All interviews were conducted by the English-speaking primary investigator with the research assistant translating consecutively between English and Hausa in Madarounfa, and English and Djerma in Kollo. Each interview lasted for approximately two hours and audio recordings were made using a digital voice recorder. The focus groups were conducted in English and Hausa or Djerma, again with the primary researcher facilitating the discussion and the research assistant translating. Audio recordings were also made of the group discussions. The primary investigator and research assistant made extensive notes during each interview and FGD.

Interviews were conducted at the primary carer's home and were held in as much privacy as possible. The two fathers FGDs were held in village clearings. The FGD with health workers was held at the district hospital in Madarounfa. At the start of each interview and focus group, it was made clear to the interviewee or participants that their involvement was optional and voluntary and would not affect any future referral or medical service required or received. The study's consent form was read and explained in detail (see Appendix 3). Informed consent was given by the signature or thumbprint of all those participating.

Data analysis

At the conclusion of each day of data collection, the research team compiled and transcribed their interview notes. The audio recordings of all interviews and FGDs were transcribed in full with sections of narrative being translated and back translated as appropriate. Preliminary analysis was conducted in-country throughout the research process. Using an inductive approach, initial findings were discussed throughout the fieldwork and at its conclusion in two roundtable debrief sessions between the research team and key staff at the UNICEF office in Maradi, and the country office in Niamey. Key findings were also presented at a final debrief session with the Health Section at UNICEF Head Quarters in New York in October.

The primary researcher was responsible for the complete thematic analysis of the interviews using grounded theory [18,19,20]. Dominant themes were identified through the systematic sorting of data, labelling ideas and phenomena as they appeared and reappeared. Coding and analysis was done by hand. The emerging trends were analysed according to the research objectives using the critical-interpretive approach of medical anthropology [21,22,23]. At the conclusion of the research in all three countries (Kenya, Nigeria and Niger), a second qualitative researcher undertook analysis of a sub-set of data from Kenya using computer-assisted qualitative data analysis software (CAQDAS). The transcripts of interviews and focus group discussions were imported into QSR NVivo software (version 9.2) and analysed using a framework approach [24]. No major inconsistencies were found between the manual and computer-assisted analyses. This allowed the Kenya analysis to serve as a benchmarking tool for the analysis of material gathered in Nigeria and Niger. The second qualitative researcher reviewed the final reports, but not the transcripts of material from Nigeria or Niger.

Methodological limitations

The study was carried out in a challenging research environment and was conducted with limited time and manpower. Throughout, we sought to mitigate or minimise the impact of these constraints by employing a methodology carefully designed to be pragmatic and by deploying resources efficiently.

Inevitably, a number of limitations remained. Risks associated with misinterpretation are inherent in consecutive translation, but a number of strategies were used to improve accuracy. In translating between English and Hausa/Djerma, the researchers planned translation and interpretation styles in advance and decided how to best capture colloquialisms, abstractions, idiomatic expressions and jargon. We used short units of speech and careful phraseology that was refined during the finalisation of the interview and FGD frameworks. During the interviews, the research team validated sections of narrative that were transcribed *ad verbatim* and certain responses were reiterated to the interviewee for clarification and confirmation. Full transcriptions of all interviews and FGDs were made by the research assistants and included the translation and back-translation of both questions and responses. During the first phase of analysis, transcripts were cross-referenced with the research team's notes, and any areas of digression highlighted and discussed. That the research team had full visibility of the growing data and were able to query potential anomalies throughout the study, served to mitigate the risk of errors in the translation and transcription process.

It is possible that interviewees expressed what they perceived to be appropriate or socially desirable responses. This is a risk in most interview-based qualitative research, but was not seen to be a major limitation, as we conducted informal, private interviews, the interviewees did not know the research team, and the semi-structured interview format allowed questions to be asked in multiple ways and responses triangulated. The FGDs also provided data sets similar to those in the individual interviewees and this strengthened their validity.

Although relatively small, the sample size resulted in saturation of findings. This acted to lessen the impact of convenience sampling. The results are likely representative of the population in the districts of Madarounfa and Kollo, but are not necessarily generalisable for the regions of Maradi and Tillabéri and cannot be extrapolated to a wider Niger context, although they are broadly corroborated by other literature (as discussed below).

The coding and thematic analysis upon which this report is based was conducted by the primary investigator. At the conclusion of the overall study (i.e. after fieldwork in Kenya, Nigeria and Niger), a sub-set of transcripts from Kenya were coded again by a second qualitative researcher using QRS NVivo software. Layers of coding were not shared between researchers until the analysis was complete. The findings were compared and used as a benchmark for the reliability of analysis across the whole study. Triangulating results using separate researchers and techniques ensures the rigor of the analytical process, enhances the credibility of the final results and is regarded as best practice.

Report structure

This study provides new empirical data contributing to our understanding of local barriers to care-seeking and treatment for childhood diarrhoea, malaria and pneumonia in Niger, specifically in district of Madarounfa in the region of Maradi, and in the district of Kollo in the region of Tillabéri. It explores the complex issues around the uptake of health services for childhood illness and identifies and assesses particular influencing factors and local solutions to overcome these perceived barriers. It was designed primarily to be of operational use to the UN Commission on Life-Saving Commodities for Women and Children, and to UNICEF at local, national and international levels.

The report comprises three main sections: results and thematic analysis; barriers and solutions identified (including a table summary); a short discussion and programmatic implications, and conclusion. This is the final report. Prior to its completion, UNICEF stakeholders were given the opportunity to provide written comments and verbal feedback that were incorporated as appropriate into the final manuscript.



Results and thematic analysis

Demographic details

Twenty-three in-depth interviews were completed: 12 in Madarounfa, and 11 in Kollo. All interviews were conducted with the primary carer of a child or children under five years of age, with the exception of one in Madarounfa, in which the mother's youngest of five children was eight years old. In Madarounfa, one of the interviews involved two sisters-in-laws as joint interlocutors. In addition two focus group discussions were held Madarounfa, one with fathers, and the other with health workers. In Kollo, one focus group discussion with fathers was completed.

All interviewees were Muslim and married. In Madarounfa, the mothers were aged between 26 and 40 years (approximate ages given, two mothers did not know their age) and had between one and 12 children. Two mothers were pregnant at the time of interview. Five of the 13 mothers interviewed had experienced the death of between one and five children and three mothers had had between one and three miscarriages. When asked how many children they had, mothers in Madarounfa automatically counted all their pregnancies, going on to explain how many children had been born and how many were still alive.

In Madarounfa, the mothers interviewed had been married for between 10 and 25 years. Eight mothers were in polygamous marriages (three as the first of two wives, four as the second of two wives, and one as the first of three wives). Most mothers claimed to have been married around the age of 15 years, and the age range at marriage was 11 to 20 years. The majority of mothers were married to older men.

Two mothers had attended primary school, one had attended Koranic school and 10 had no schooling. Four reported that their husbands had attended primary school. Five of the thirteen mothers reported that their children did not attend school, one reported their child was in Koranic school and the remainder concluded their children were attending or would attend school when they were old enough.

Nine of the mothers in Madarounfa reported that their husbands were farmers and/or casual labourers. The other four were a driver, a taxi conductor (in Nigeria), sweet seller and chicken seller. Most earned around 500CFA per day (less than \$1 a day, 1USD=520CFA). The driver could earn 2,000CFA per day, the taxi conductor sent home 10,000CFA a month and one interviewee, the second wife of the village chief, asserted that her family could make 50,000-100,000CFA per month when they sold their farm produce at market. Several interviewees worked on farms or in casual labour, and as one explained, women were only paid 250CFA per day for casual work (approximately half of what a man was paid). Three interviewees were engaged in small business, making and selling food stuffs and generated an income of between 100-500CFA per day and up to 4000CFA a week, if business was good.

In Kollo, the mothers were aged between 19 and 39 years (all provided their approximate age) and had between four and eight children. Three of the 11 mothers had experienced the death of one or two children, and one a miscarriage. The apparently lower incidence of infant mortality in our small

sample in Kollo may be because there (unlike in Maradi), mothers only enumerated children who were still living, and would mention miscarriages or child deaths only when explicitly asked. The research team became aware of this having conducted four of the 11 interviews. The remaining seven interviewees were then directly asked about non-living children, and of those, three discussed the death of one or two children.

The mothers interviewed in Kollo had been married for between three and 24 years. The average age at marriage was approximately 17 years and the age range at marriage was 10 to 27 years. Again, most were married to older men. One interviewee had re-married after the death of her husband. Three were in polygamous marriages, all were the second of two wives.

Five of the eleven mothers interviewed in Kollo had attended primary school. Five reported that their husbands had attended primary school, and one that he had completed secondary school. Only one mother said that her children did not attend school.

In Kollo, six of the mothers reported that their husbands were farmers and/or casual labourers. Of the remaining four, one was a trader in Niamey (dealing in spices and food stuffs), two were builders, and two were abroad conducting business (one in the Ivory Coast, the other in Benin). Several mothers explained that their household did not generate any income, and the only cash money they received was through gifts or distribution. The trader could make 5000CFA per day and the builders around 20,000CFA per month. The husband in the Ivory Coast would send home 10,000CFA a month, but the husband in Benin did not make regular remittance. Three of the 11 interviewees were engaged in small business, collecting and selling edible leaves, ground nuts and making and selling porridge for between 1000-1500CFA per day.

The reported occurrence of malaria and diarrhoea was similar in both districts. In Madarounfa, 10 of the 13 mothers, and in Kollo, seven of the 11 mothers interviewed claimed that at least one of their children had experienced at least one episode of malaria in the previous six months. Regarding diarrhoea, eight mothers in Madarounfa and seven in Kollo claimed at least one child had suffered from at least one bout in the previous six months. In Madarounfa, five of the mothers reported that a child had experienced pneumonia at some point during their life, compared with nine mothers in Kollo. The difference is likely due to variations in local languages and understandings of the numerous terms used to mean pneumonia (discussed below).

Ten fathers participated in each of the fathers focus group discussions held in Madarounfa and Kollo. In Madarounfa, the fathers were aged between 22 and 70 years and had between three and 18 children each with their youngest child being under five years of age. Three were in polygamous marriages with two wives, and three more had previously had two wives but had divorced one of them. In Kollo, the fathers were aged between 31 and 72 years and had between one and 11 children each. In three cases, their youngest child was over five. One was seven years old, and the other two were sixteen and twenty years old. In the latter two cases, both men supported grandchildren aged under five years.

The focus group of health workers in Maradi had eight participants from three different villages (Soumarana, Dan Mazadou and Radi) and comprised two community nurses and six *relais*.

Causation and prevention

Malaria

In both Maradi and Tillabéri, malaria was routinely listed by respondents as the main cause of childhood illness. In Madarounfa, the terms ‘fever’ and ‘malaria’ were often used interchangeably. Fever in Hausa is *massasara* and malaria is *massasara cizon sauro*, literally ‘fever (*massasara*) bite of (*cizon*) mosquitoes (*sauro*)’. In Kollo, malaria was referred to as *heemariize* in Djerma. In both districts, the causal link between malaria and mosquitoes was well known, although on several occasions respondents attributed their reasoning to ‘medical people’.

We just call it fever [massasara], at the health post they tell us its malaria [massasara cizon sauro]. The medical people tell us malaria is from having our things all over the place and not entering the net, we just go to the hospital with fever and do what they say.

When asked about other potential causes of malaria or if the community thought there were other reasons in addition to the explanation of medical people, interviewees suggested malaria came from dirty or stagnant water and dirty surroundings. As one mother in Kollo explained, ‘*Malaria is from dirty water and from garbage. If there are bins there are more mosquitoes and then when they bite the children, they get malaria*’. At the time of research, areas of Kollo were badly affected by flooding, and several interviewees affirmed that there were more cases of malaria during the raining season. Similarly, in Madarounfa, a number of respondents, including a *relais*, suggested that ‘*when it rains and the children play out in the water they get fever*’. The link between water and contracting malaria was also extended to include bathing. The mother quoted above continued to explain that in contrast to the ‘medical people’,

We illiterate people say that if you wash the child over and over again it causes malaria. At the health post they make you wash the child three times and then put clothes on, to make their fever go down, but for us, we ask why do they keep washing the child when that can cause malaria?

This illustrates potential conflicts in care-giving practices due to perceived causation, that were similarly reflected in practices of prevention. As another mother in Madarounfa concluded,

Medical people tell us malaria is from mosquito bites. We didn’t know, when Allah brings malaria to the child we take them to the health post, you are the ones who know, you are the ones who know how to prevent it. Allah brings the malaria, everything comes from Allah. We don’t do anything.

Interviewees who claimed there was no way to prevent malaria were, however, in the minority, and usually related the occurrence of malaria and other illness directly to the Will of Allah.

We don’t know what brings the fever, when the body is hot you know they have malaria. To stop children getting the fever, only the [health] workers know. There is nothing we can do, it is just Allah that brings it. You can’t go in front of Allah [ba’a iya shiga gaban Allah – i.e. you can’t do anything to stop Allah’s Will]. If Allah brings malaria, it is a problem.

The majority of respondents concluded that malaria was prevented by the use of bed nets. As one mother explained,

Our prevention is once it is dark we tie the net and get in. Even if you want to chat, you chat from the net, that is our prevention. If you don't enter the net soon enough, then the mosquito will bite you and you will get malaria.

In many cases, interviewees explained that they used the nets primarily to stop being bitten, rather than to stop contracting malaria, an approach somewhat reinforced by the linguistically explicit connection between 'fever' and the 'bites of mosquitoes' in the Hausa term for malaria. As a mother in Madarounfa described,

The net you go in is not to stop the malaria but to protect yourself from the mosquito so that it doesn't bite you. Then your skin gets all red and the blood of the mosquito can bring malaria. The nets stop the bites not the malaria from coming.

Similarly, another mother explained,

Now the head has broken [kai ya fashe – i.e. they have become aware] we know to tie the nets to sleep under. We use the nets to stop the mosquito bites, to stop the bites. Not even a fly can get through to bite you and the fever will not get you if you are lucky.

As with this interviewee, several other respondents perceived there to be an element of luck in whether a person contracted malaria or not. Some were perplexed that children had malaria despite their daily use of nets, although others recognised that they could be bitten in the bush or at other times.

Most participants had been given their nets at a health facility, either after delivery or vaccinations, or at a malnutrition centre. Others had received them in a free distribution in their village, and two mothers reported they had been given them after their children had received the polio vaccine. The majority of interviewees had two nets per household, although one mother in Madarounfa had four nets, including a spare one.

I don't know exactly who it is that comes, but they ask if you tie the nets... I have four nets. I got some from here and then when I took the children to the malnutrition place I got one, and then also another one from a different health post. I gave one to my husband, and I use one with the children, and I gave one to my mother. I have a spare one, and I keep it in the suitcase so that I can replace a net when it is spoilt.

A number of interviewees had purchased their nets at the market, for between 1000-2000CFA. Fathers in their focus group discussion in Madarounfa also explained that it was possible to buy nets directly from mothers who had been given nets (through distribution or having delivered at a health facility) that their own households did not need (such as the mother quoted above). In such cases, mothers sold nets at the same price as the market. Having surplus nets was very rare, however. In many cases, interviewees emphasised that they did not have enough nets to protect all their family

members, that the nets they had were old and with holes, and that they could not afford to buy new nets. The following statements were representative,

I have one net, right here, but it has a hole in it. It is about three years old, I got it when they were distributing them. I went to one village but they had run out, so I came home and then we heard they were distributing them in another village, so I got it there. I sleep with all the children under the net. I have five children, two girls and three boys, aged ten, nine, five, three and one year. The net is not big enough so it is really a squeeze. Sometimes the child sleeps outside and that is why the mosquitoes bite them and they catch malaria.

I have two nets, this one [hanging over the bed] and the one I keep on top of it, that one I hang over this sleeping area [where we are sitting]. This one has holes in it. I got them from the hospital in Maradi when I went for ante-natal [awo – literally ‘weighing’]. I put the triplets on the bed because if I put them with the others, they will lie on them. And I sleep with the others here on the floor, with the other nine children. We all sleep here. It is squeeze, there is no space, just look at the room there is. When it is not wet outside, the older children spend time outside before coming in to sleep and they get malaria.

Most commonly a mother and her youngest child(ren) would sleep under one net, and if the household had another net, this would be used by the husband (household head) and /or other children. It was common, as emphasised in the quotations above, that because of shortages in the number of nets, some family members would routinely sleep unprotected. As fathers discussed in their focus group in Kollo,

Father 1 – the bed nets for children and mothers are free, there was a distribution here

Father 2 – but there are not enough nets

Father 3 – I put all the grandchildren under the net and I sleep outside

Father 4 – for us old men, there are no free nets, we just have to buy them and we can’t afford to

Father 2 – for young children, we decide to take them in the bed nets and the older children sleep outside

Father 4 - there are not enough nets for all the children, so they push them [other children] out! [i ga i tutey tarey!]

Father 3 – and they push us [fathers] out! [i ga iri tutey tarey]

In Madarounfa, three of the ten fathers in the focus group did not have a net. As they explained,

Father 1 – there is a lack of mosquito nets here

Father 2 – the wives got them from the health post when they were pregnant

Father 3 – I bought a net, for 1750CFA, in the town here

Father 1 – I don’t have a net, I have thought about buying one, but I don’t have the money and I don’t have a wife who has a baby now

Father 4 – if you go under the net and tuck yourself in well, then it [the mosquito] can’t go in

Father 2 – but sometimes our wives are careless and the children play with the nets and they get holes, or they sit outside to chat and get bitten

Father 4 – I have a net my daughter gave to me

Father 5 – I don't have any at all

Father 3 – my wife and children sleep under the net

Father 2 – but some who have eight or ten children can't fit them all in, so usually the youngest two or three sleep under the net.

Two mothers interviewed, one in Madarounfa and one in Kollo, did not have any bed nets. A mother of eight children in Kollo explained that she had thrown her old net away because it had holes, had resorted to covering her children with a sheet when they slept.

The net was from the health post but it was old and so we could no longer use it. To prevent malaria I cover the children with the linen [sheet] when they sleep. We don't have a bed net now, so I just have to cover them with the linen. We would like a net very much, it would be very good to have one. But to get a net, I would have to buy it from Niamey, but there is no money in my hand for that. Nobody in the house has one, not even my husband.

Lack of access to nets was often raised by the interviewees. One mother explained that although her daughter had recently delivered at the health post, she had not been provided with a net. Similarly, another mother claimed, *'I didn't get a net last time I was pregnant, they [the health post] was already out. I brought all three nets because there was no stock at the hospital, they had none to give out'*. The health workers also discussed the shortage of nets in their focus group,

Health worker (HW) 1 – most have nets, but not everybody. When women come to the health post when they are pregnant or to deliver then they get one, and those that don't have babies have to buy it from the market

HW 2 – but at our health post, we have not had nets for more than one year

HW 3 – it is very rare to have them at the health post, it is more likely at the health centre

HW 2 – but we did have them before

HW3 – at our health post, we got 100 a month ago. Technically they should come from here [district hospital] to the health centre and then to the health post, but I asked for them directly from the management here. The doctor asked what did I need, so I said nets, and then he sent them to me.

HW 2 – it is a big problem that we don't have nets to give. The mothers expect the nets and they ask why we don't have them when other villages do. It stops women from coming. They go instead to another village to get the nets. When they arrive at the health post there, they lie that they are from different locations to ours to get the net.

Aside from bed nets, other prevention measures to avoid being bitten included using body lotion, burning incense, ensuring the home and compound environment was clean, and using an insecticide spray such as Shelltox or Piya-Piya. Parents also discussed the need to prevent children from getting wet and cold by not allowing them to play in water or the rain, and only bathing them whilst the sun was in the sky.

In Kollo, a clearer distinction was made between fever (*konni*) and malaria (*heemariize*) than in Madarounfa, and also between fevers brought on by, or accompanying, other illness (*doori konni*). In Madarounfa, several interviewees discussed *higa ruwa*, a type of 'complicated malaria' that often resulted in death (most likely cerebral malaria). Also referred to as *fara massasara*, meaning 'white

fever', symptoms of *higa ruwa* included, shortness of breath, high fever, a jerking body, fainting and *'the eyes rolling up and backwards'*. As one mother explained, *'I don't know what the sickness is, but there is one called higa ruwa where children jerk and their eyes turn around and if you don't take them to the health centre they die'*. The symptoms frequently led interviewees to associate *higa ruwa* with spirit attacks (discussed below).

Diarrhoea

In Madarounfa, diarrhoea was termed *zawo* in Hausa, and in Kollo, it was referred to as *gunde kar* in Djerma, literally 'stomach bite'. Several mothers in both districts claimed that it was not a serious problem, that it was normal for young children to get diarrhoea, they did not suffer with it, and that it was part of the process for them to *'start growing and become humans'* (*su fara girma su zama manya mutane*). Many mothers concluded that younger children contracted diarrhoea mainly due to teething. In older children, diarrhoea was attributed to a dirty environment, particularly 'open' or 'dirty' food (*nwaari ferente* or *nwaari zibo* in Djerma), which flies could contaminate. Undercooked meat, certain vegetables, unwashed bowls, plates and cooking utensils and dirty water were also seen to be causes. A few mothers associated diarrhoea with dirty hands, and as a father in the group discussion concluded,

When a place is dirty, there are flies and a person who is dirty cannot prevent diarrhoea, so you must be clean and your home must be clean. You must buy soap, and clean your hands and wash your clothes. Another problem is stagnant water, sometimes there is so much that we can't cover it with sand and that can cause diarrhoea.

Hunger, lack of food and malnutrition [*tamowa* or *'kwamuso* in Hausa and *harey beri* in Djerma] were also seen to cause diarrhoea in both children and adults. As the following two mothers from Madarounfa explained,

Diarrhoea is from malnutrition, that is what causes it. There is no food for the mother so the child doesn't have enough food, not enough breast milk. To me, diarrhoea is just from malnourishment. The stomach can't take it. We ate two days ago. If you were sitting closer, you would hear my stomach growling.

Diarrhoea, even hunger brings it. If you don't eat for a long time, then the stomach is all tied up [ciki ya kulle] and when you do eat you get diarrhoea. If, after two or three days, you have not eaten, then the stomach ties up. Honestly, the children go hungry. If I have something I provide it for them, but if not, like now, we all go to sleep hungry.

Conversely, if the stomach was too full, or a person ate the wrong food (*'you know us villagers, we eat all sorts of plants and if the stomach doesn't like it, you can get diarrhoea'*) it could also cause diarrhoea.

Frequently, diarrhoea was discussed as a symptom of other illnesses, arising particularly from fevers, rather than being viewed as a health problem in its own right. In Madarounfa, although not in Kollo,

it was also closely associated with haemorrhoids (*zahi*). Generally, diarrhoea was perceived to be more serious in adults than in children, particularly during the fasting month of Ramadan, and as one mother concluded, *'I would rather have malaria then diarrhoea, fever is better because diarrhoea reduces you [yana rage ka – meaning it weakens you] so quickly'*.

As with malaria, the occurrence and prevention of diarrhoea was often linked to the Will of Allah. Whilst a few mothers suggested that there was nothing you could do to prevent diarrhoea, stating *'just Allah knows how to prevent it'*, most interviewees were able to suggest a variety of prevention strategies including keeping food and water clean, maintaining a clean and tidy environment and hand washing. As one mother concluded, *'There is need to protect the food you eat and keep things clean. If you protect it then Allah will help you and you will not get diarrhoea'*. Interviewees in Kollo were more vocal about prevention strategies for diarrhoea than those in Madarounfa, although respondents in Madarounfa had more information about the prevention of malaria.

Carers were also questioned about water, sanitation and hygiene. In Madarounfa water was commonly sourced from wells, bore holes and pumps and in Kollo from wells, pumps and forages (drilled wells). Few interviewees collected rainwater during the wet season, and then only if they were desperate, as it was regarded as 'dirty' water because it was collected as run-off from the rooftops and liable to be contaminated by pigeon and lizard excrement. Water from the pump or forage was thought to be 'sweeter' and was the preferred drinking water, although its collection tended to incur a cost that was prohibitive to some. A number of the poorer households resorted to collecting water from ponds and streams.

Few households in Madarounfa treated their water in any way. Two mothers in Soumanara explained that when they had money, they occasionally bought 'medicine' from the *relais* to put in the water, and fathers in the focus group discussed their use of *'something traditional called lallam. It is a kind of salty and it comes from Nigeria or Agadez. It is not expensive, you put a little pinch in a jerry can and all the dust and sand settles and it comes clear'*. Other interviewees put a little bleach (*eau de javel*) in their water as a purifying agent because they *'don't trust the water'*. No mother in Madarounfa discussed boiling water, although in the focus group, the fathers explained that *'after delivery, some women will boil water for the new born before they give it to drink'*, adding *'but if it is a problem we can tell them to stop'*. In contrast, many mothers in Kollo discussed filtering water by pouring it through a piece of linen or nylon cloth (one example shown to the research team was an old head scarf).

There is not enough water at the pump for everybody, so I am tired to wait there and I collect water from the well. But the well water is dirty, there is no cover and things fall in. The animals and us drink from the same water. The water is free, but there are so many things [hari izey – water children], red things [hayfo cirey – little worms] in it that you have to filter it [sarrey] through the linen [zara zara] and then you can drink.

Four households interviewed in both Madarounfa and Kollo had access to a latrine, usually built for the compound by the male household head. In one case in Kollo, the latrine had been built by a team of *'white men who came to the village'*. The majority of carers went in the bush and used a potty or plastic container for young children, throwing the contents into the bush or general rubbish heap. Very young children would squat in the compound and it was common to see small piles of freshly

turned sand covering their excrement. Hand washing practices were generally good because of the regular ablutions required by Muslim prayer. Numerous mothers discussed hand washing after eating, working and going to the toilet, although few seemed to use soap.

Pneumonia

Cough	<i>tari</i>	Cough from the cold	<i>tarin sanyi</i>
Cough at the front	<i>tarin gaba</i>	Cold in the chest	<i>sanyin gaba</i>
Cough in the lungs	<i>tarin huhu</i>	Cold in the bones	<i>sanyin 'kashi</i>
Spoilt cough	<i>tarin lala</i>	Sickness of the ribs	<i>ciwon awazai</i>
Extreme cough	<i>tari mai tsanani</i>	Cough of the ribs	<i>tarin awazai</i>
Cough with mucus	<i>tarin majina</i>	Cold	<i>sanyi</i> (syphilis)
Cold in the chest (like flu)	<i>majina</i> (phlegm or mucus)		

Malaria and diarrhoea were well known conditions with specific terms in Hausa and Djerma. Pneumonia, whilst always associated with cold, was described in several different ways. In Madarounfa, no respondent was familiar with the biomedical term for pneumonia in Hausa, *ciwon sanyin huhu*, rather they used a combination of definitions focusing on symptoms relating to cough or cold in the chest or ribs:

The descriptions used often generalised a range of respiratory conditions, as the following quotations from Madarounfa illustrate,

'Cold in the chest' [sanyin gaba] is that disease that people say comes from the cold and it gets in your bones. None of my children have had it, but other children have, and we hear people talking a lot about it. First the hands swell and then the legs and they have cold in the bones [sanyin 'kashi]. The child cries and cries and cries day and night. The cough that comes from the cold [tarin majina], that is when the children have the cough and it hurts, the ribs hurt. That cough, my oldest has it, and he coughs a lot.

I don't know 'cough at the front' [tarin gaba] but that illness you describe, we really have it here. We call it the 'sickness of the ribs' [ciwon awazai]. In the village we say it comes from suffering [wahala] and if they are coughing then that pains the ribs.

When you have cold and you cant bring the phlegm [majina] out of the chest, I know it needs care. Older people can, but babies can't, so it stays stuck there and the chest hurts them. We call it 'majina' because that is how it starts and then they get a cough.

There is one illness that affects children and one that effects newborns. Their breathing sounds like hort-hort, and they die from that. It happened this year a lot and when it was impossible for the lady at the health post, she sent people to the hospital [babban gida – literally big house] in Maradi. Some survived and some died. For newborns we call it 'cough' but we don't understand the sickness. Then there is also 'tarin lala' [spoilt cough]. Children get it and when they start they look like they have fainted but then they come round again and cough and cough.

In Kollo, interviewees were unfamiliar with the biomedical term for pneumonia in Djerma, *gandey doori*, literally ‘chest hurt’ or ‘chest ache’. Instead they used the term *hungum*, and associated pneumonia with cold (*yeeni*), cough (*cotto*) and sneeze (*cisso*). In this district, the term *hungum* was not always restricted to acute respiratory illnesses and respondents often included common colds and flu, which may account for why nine of eleven mothers interviewed claimed their child had experienced pneumonia.

I know pneumonia because my child has it all the time. He has red eyes, body fever and he sneezes. His chest hurts and it is difficult to breathe. His chest gets trapped [di].

With pneumonia you have a sneeze, fever, vomiting and cough. It affects the breathing. All my children have had pneumonia. The last time was then when the youngest had it when he was about 6 months old. Many children get it, just after the raining season.

Pneumonia is a cough and sneeze and vomiting and they have a problem to breathe. Many children have pneumonia. My own child had it. I knew it was pneumonia so I took him to the health post and the doctor gave medicine for inhalation in the nose.

A small number of respondents claimed not to have heard of pneumonia, and did not recognise the condition from the research team’s description. The majority, however, associated it with the cold and with getting wet in the rain and prevention strategies were largely focused on keeping children warm and dry.

Pneumonia is caused by the cold and when the children go out in the rain. To stop it, you don’t give a bath when the sun is not up and then you bathe them with warm water and put them in warm clothes. More children get pneumonia in the raining season than in the dry season because of the rainfall, and sometimes, when I don’t know it, my children will go to swim in the pool and then they get pneumonia.

Fathers in the focus group in Kollo also stressed the need to keep children warm.

Father 1 – we know pneumonia, we have seen it. It is difficult to breathe. After the raining season when the cold starts, that is the time for pneumonia.

Father 2 – in the cold season, if we don’t take care of the children, they can have pneumonia. If you don’t give them clothes, a pullover and a hat for the cold, and if the [cold] air enters the nose.

Father 3 – many people don’t have enough money to buy clothes for children to prevent pneumonia, so you have to make a fire to keep them warm.

In Madarounfa, several interviewees linked pneumonia to a child getting cold in the womb, and a number of mothers also associated it with sickle cell anaemia.

Father 1 – pneumonia, cold in the chest of children, when they are born they normally have it, newborn babies and children four and under.

Father 2 – it is the breathing, their breathing doesn’t come out clearly

Father 1 – cold causes it, our wives drink iced water when they are pregnant. We have tried to stop them.

Father 3 – and they also go sleeping outside and get cold.

Pneumonia is from the cold, when there is too much cold in the mother's belly. That is why they tell us not to drink iced water when we go to the health post for weighing [ante-natal]. They also tell us not to leave the children outside in the cold, because that also causes sickle-cell anaemia. Two children of my co-wife have sickle-cell anaemia. The hospital told us. The body was swelling up and we didn't know what it was. The child's legs were hurting and the [health] workers said it was sickle-cell anaemia from the cold. If the mother sleeps outside and gets cold whilst she is pregnant that causes it.

Local theories of causation

As discussed above, the occurrence of illness was frequently associated with the Will of Allah, and this determined the presentation and seriousness of a condition, influenced prevention strategies and controlled the outcome and effectiveness of medication. As a mother in Kollo described, '*only Allah knows how to prevent these illnesses and the medicine will work if He wants*'. The death of a child was often attributed to the end of its time or soul, a fatalistic attitude that did not, however, appear to preclude treatment. Another explained, '*when a child is ill it can be one part malaria but then when the soul is finished they die* [fundey ban i bu]'. Similarly, a mother in Madarounfa described,

Children here die from different diseases. It comes with the end of their time. Some get sick and sick and sick and it coincides with their end, Allah takes them. Other children are lucky and with treatment they survive. The child dies if it is their time, but mostly the mosquito bites are the cause of it.

Although spirit attacks and evil were discussed as causes of other illnesses, malaria, diarrhoea and pneumonia were not readily associated with local theories of causation unless the condition became worse, developed unusual symptoms (as in the case of *higa ruwa*, or cerebral malaria) or if biomedical treatment was thought to be ineffective (discussed further below).

Care-seeking behaviour

Plant medicine

In both districts, local plant medicine was used in the treatment of malaria, diarrhoea and, to a lesser extent, pneumonia. In Madarounfa, local plant medicine was referred to as Hausa medicine (*maganin Hausa*), traditional medicine (*maganin gargajiya*) or medicine of the house (*maganin gida*). In Kollo, it was referred to in Djerma as plant medicine (*boro bi turi*) or home/house medicine (*koira safaray*). Medicines were made from the leaves, root or bark of trees, the plant material usually being crushed and mixed with hot or cold water and then drunk. Leaves from the Acacia tree were often used, and aromatic leaves including guava, citrus and ginger. If a breastfeeding child was ill, it was common for the mother to drink the medicine herself, rather than giving it directly to the child. For older children and adults, the medicine could be mixed with a millet drink ('*hura*' in Hausa). In addition to ingestion,

Illness	Madarounfa (local terms in Hausa)	Kollo (local terms in Djerma)
Malaria	Kinkilba Tafasar masar Gwadar masar Tabade	Massa Ganda korey Chan hanga Halimey foy Nafa nafa Gadidji
Diarrhoea	Gwaba Lemu Kauci Bagaruwa Danya Bedi	Bani Bilssa Djiti Sabara Lamti bassé
Pneumonia	Kinkilba Tafasar masar	Massa (with ginger)

some plant medicines were also used to bathe or massage children. The above table lists the plants used in local treatments discussed by the respondents in both Madarounfa and Kollo.

In both Madarounfa and Kollo, interviewees discussed three ways of obtaining or making local plant medicine. Firstly, the mother, or occasionally the father, other relative or neighbour, would collect the leaves from the bush for the mother (relative or elder) to make into the medicine at home. Secondly, the mother could buy the ingredients to make into the medicine at home, and lastly, the mother could buy the medicine already made up. The ingredients or medicine, called ‘children of the leaves’ (*‘ya’yan itace* in Hausa) could be bought from herbal medicine vendors or sometimes from small trading stores. As one mother explained,

I can make the medicine myself, but if I don’t have the time to collect the leaves or if it is a different medicine that I want, then I can buy it. You can buy it from the vendors that come around, or at the small shop. Somebody else has ground the bark and brought to the man to sell. He sells only that one Huasa medicine, but in his shop there are other things, like flour, macaroni and sugar.

Although many of the interviewees still used local plant medicine, it was generally perceived to be a practice of older people. One mother in Madarounfa explained,

Those older people are more knowledgeable [tsohi masana] and go to the bush to get local medicine. When they hear the child is sick, they say, ‘let me go to the bush to try the medicine’. I don’t know the plants because I am young. It is only the older ones who know if, who during their time, didn’t know anything about the hospital. They know specific plants for sickness. Like that plant there, they would know what that was for.

Whilst many had learnt the skill of making plant medicine from their elders (in Hausa, *mutanenmu na da*, literally ‘our people from before’), only a small number considered passing that knowledge onto

their children. Several carers perceived local plant treatments to be a thing of the past. As a mother in Kollo concluded, '*now is not the time* [for plant medicine], *the time has passed*' (*mate a wate no, wate bissa*). Another mother in Madarounfa concluded,

In the past when we didn't know, we used to do Hausa medicine, but now we take the children to the health post. Then we used to get plants from the bush, and sometimes now, if you are older you still do the traditional one to see if it works. Or if you don't have money, or after going to the health post. We know about it from people in the past. I won't show my daughters as we have stopped doing that now.

There was a definite preference in both Kollo and Madarounfa to attend the health post first, and revert to local plant medicine if the 'white man's medicine' was not effective.

The plants are in bush. I go by myself to collect them. We saw, even before we grew up, we saw older people doing it, so we learnt from them. There are specific plants that we pound together and mix with water and then drain and drink them, or the mother drinks for a young baby. It helps very well. But now, we go to the health post first. Yes, it is really like that, we use Hausa medicine if the other medicine doesn't work.

I don't use herbs because now there is the health post. I am young and I know only the health post, not the plants. I don't like the herbs, so I don't ask the older people about it.

There is Hausa medicine, but because we have increased brightness [kara waye kai – increased awareness] we now go straight to the health centre. We don't do the Hausa medicine as we used to in the past. Even the medical lady [nurse at the health post] complains if we do Hausa medicine first.

Although several respondents still perceived the use of plant medicine to be the appropriate front line remedy for some illnesses, particularly diarrhoea and stomach ache (a father in the focus group in Kollo, for example, confirmed that he had used home medicine the previous day to ease his own stomach ache), for others, its use was due to their lack of immediate access to health services, either because of distance or financial barriers (discussed further below). As a mother in Madarounfa concluded, '*my medicine is here, it is that tree* [pointing the large Acacia tree in the compound], *the tree is my healer* [bedi shine bokana]'. The changing patterns of use were discussed by the health workers in their focus group discussion in Madarounfa.

HW 1 – Hausa medicine, some make it themselves and some buy it

HW2 – it is from the older people who have done this from way back, from when they didn't know anything about the health post

HW 3 – now people understand, they don't really use it. The relais helped give information and now the first step is the health post

HW 4 – it is really all over now that they go to the hospital

HW 3 – sometimes they do it before the hospital, and at other times, there are people who convince that after the hospital they should try Hausa medicine, so they do it in parallel

HW 5 – but sometimes they do Hausa medicine first and then they come

A number of mothers also discussed making 'salt water' (*ruwan gishiri* in Hausa and *cirri hari* in Djerma), a local alternative to ORS (Oral Rehydration Solution), to treat diarrhoea.

They [health workers] told us about the salt water, so you can do it at home yourself. To make the salt water, you get a clay pot and put some water and boil it and then put it in a container to cool. Then you put sugar and salt and mix together. If it is sugar powder then you put three spoons, the small spoon for eating, and then the salt you pick with three fingers, and you mix it into water, about half of a small bowl that you have cleaned very well first. You give the child little by little until the evening and if it is not finished then you throw it away and do it again the next day. If the child is not better, then you go to the health post and they will give you two sachets for free.

Traditional and spiritual healers

Terms for traditional and spiritual healers were used interchangeably. In Madarounfa, the Hausa terms most often used were *mai magani* (traditional healer) and *boka* (spiritual healer). Fathers in the focus group in Madarounfa also referred to 'yan bori, literally 'followers of the cult' where *bori* translates as 'the cult of spirit possession'. As in Kollo, where healers were referred to as *zimma* or *magori* (actually a Hausa term), both traditional and spiritual healers used a combination of herbs, communication with spirits, and in some cases, animal sacrifice, to cure illness. In Madarounfa, a mother explained,

We have those that work with spirits to do medicine, we call them 'almajira' [a Koranic term meaning humble learner or beggar]. There are illnesses where the evil spirits catch a child and when we call her, she uses her own spirit inside her head to catch the evil spirit. You can tell the evil spirits, because the child screams and screams somebody is coming to slaughter me, somebody is coming to slaughter me [yaron ya yi ta kara za'a tanke ni]. A lot of women and children have that. I haven't used the almajira as Allah has protected by children.

In Kollo, two other mothers described their involvement with spiritual healers,

We go to the spiritual healer [zimma] if somebody turns around the child [da boro fo go zanka bon] or if the child is scared about anything. He gives information about herbs [turi kopto] and rituals [gunayan] for the child. The herbs are for 'incensing' the person [bora dugu – burning on a fire so the smoke covers the patient or fills the room] and for drinking. He prays for the child and gives the herbs to the mother to drink. The spiritual healer can see the evil by just seeing the children [zimma ga di dooro za a di kotia].

We use the spiritual healer for evil [hay lalo – also means curse] or when the child is scared [humburu] about something. He uses powder for drinking and for mixing with body oil for massage, and there is one [herb] to put on the fire for incensing.

Several participants also discussed seeking protection (*kariya* in Hausa and *faba* in Djerma) from local healers, and it was common to see children wearing a talisman (*laya* in Hausa and *hiri koirey* in Djerma) around their necks, waists and/or ankles. In Kollo, a number of mothers explained that they

bought a talisman for the child to wear when teething. Made from 'white pearls', the necklace cost between 50-100CFA and could be bought from the market or *mogori*. Others spoke about wearing talismans for protection. A mother in Madarounfa explained,

I get medicine for protection, to stop bad things happening to them. You can get it from those who sell Hausa medicine, for children and adults. It costs 250-500CFA, it is not expensive. This one [points to the band the child has around her waist] is for the cold season. They sell that one for 100CFA and I bought it for her, its prevention and it works. It has medicine from the bark of a tree.

Another mother in Madarounfa concluded,

The child's necklace is from being sick with higa ruwa last year. She fainted and passed out and we took her to the hospital for five days. When we came back home, my parents sent that to give her health and protection [tsari]. I don't know anything about it. My parents bought it from somewhere. I don't know what is inside, but I put it on her and she has not had a problem since.

Wearing a talisman was seen to be a normal practice, easily accepted and followed without question or analysis. As one mother explained of the talisman her son wore around his ankle, '*it is protection medicine, I don't know what it is for, the father got it, but I don't know where from. He just told me to put it on, all the children have it*'. Most respondents appeared willing to discuss talismans and local healers when asked directly, but there was a sense that these were private issues to be treated discreetly. As a father in the focus group in Kollo asserted with a smile (before continuing to explain about traditional treatments in some detail), '*spiritual things are confidential, not for the white men*'.

Muslim malams (a Muslim preacher or teacher, lower in rank than an imam, also known in Kollo as *alfaga*) were frequently discussed by interviewees in both districts as sources of healing and protection, although the practices performed by malams and traditional spiritual healers were different. As fathers in the focus group in Madarounfa debated,

*Father 1 – if somebody is affected by spirits, by evil spirits, you sometimes go to the spiritual healer
Father 2 – you can take them to the traditional healer for spirits but you can also go to those malams for healing*

Father 3 – when somebody has this problem, once in a while their behaviour changes and if it doesn't go away then you take them to the malam to pray for them

Father 4 – if the child is not always themselves, or in their own mind, they might jump or jerk [cira]

Father 5 – the treatment is not the same. The malam prays, he says a prayer, and he spits. He can write on the ground and then touch the person, or he can write on the board and then wash it and the person drinks the water. The other one, he gives plants, or you bring animals to sacrifice Women prefer to go to the spiritual healer and men prefer the malam

Father 2 – but sometimes when you go to the malam they say a prayer and tell you that the only person who can heal you is the spiritual healer. Sometimes you go to the spiritual healer and he says the only healing can come from the malam

Father 1 – they have their heads together to get money.

Interviewees often explained that they visited a malam for protection or for their blessing, even when there was nothing wrong. A mother in Kollo concluded,

I go to the Muslim malam, not for any matter, he just prays for a good life [nwarey gaham bani se]. I've never taken the child when they are ill. I just give the malam some money to do a prayer for the child, I give 100-200CFA. It helps very much, it is protection.

Other mothers also obtained talismans from the malam, rather than from local healers. A mother in Madarounfa whose year-old triplets were all wearing necklaces, explained,

These necklaces are for protection, I got them from the malam, I don't know what it in the pouch, protection from evil spirits and being cursed. We put them on the children because I wanted Allah's protection, and these things do protect them.

Respondents also described visiting a malam for specific conditions. One mother described attending the malam if 'a woman is in intense labour and is not delivering, then she drinks the malam's prayers and it helps'. Another, in Madarounfa, explained seeing a malam during pregnancy,

I see the malam when I am pregnant. If I have problems, I go there and he writes the names of Allah [the 99 names of Allah inscribed on prayer beads] and then he washes the paper and gives it to me to drink. It works very well. It serves two purposes, either to get the child to stay and grow, or if the child is dead already, to make it fall out [fa'do - miscarriage].

Several participants confirmed they sought care from a malam for headaches [*bon sari* in Djerma, literally 'head jumping'), if their symptoms appeared to be unusual (as with *higa ruwa*) or, most commonly, if the child was scared or afraid. In such cases, the risk that evil spirits were affecting the child was thought to increase. Similarly, if a child had undergone treatment at a health facility but the treatment was perceived to be ineffective, it was thought likely that the child was being attacked by evil spirits (who were preventing the treatment from being successful). As two mothers in Kollo explained,

If children have an illness like being scared or afraid, I take them to the Muslim malam and he prays for them. But if I saw the child is still sick after taking medicine from the health post, then I would also take them to the Muslim malam. He writes a paper for washing and drinking. I pay 1000CFA. I think this is not expensive for recovery [ay ga mila kan a si cada boro ma du bani]
I go to the Muslim malam without illness. He gives a paper with religious writing and washes it and we drink it, we can go at any time with no reason. But I will take the children to the malam after the health post if the [health] workers don't see there is any problem. If they say there is nothing wrong, then I will think about home medicine, or if the symptoms come back, then I think the children are scared about something [meaning they have been cursed] and I will go to the malam for prayer and protection.

Traditional and spiritual healers, and Muslim malams are important aspects of local care-seeking behaviour, however their direct involvement with clear and uncomplicated cases of malaria, diarrhoea and pneumonia were limited. One mother interviewed, who was the wife of a malam in

Kollo, confirmed that *‘many people come to see my husband when they are ill and have problems, but he doesn’t do anything for diarrhoea, malaria or pneumonia, just when the child is scared or there are problems in the house [fu masala]’*. Similarly, fathers in the focus group in Kollo concluded, *‘there is no muslim malam who can say they cure fever’ [‘alfaga kulu no si ne inga ga wani konni safaray’]*.

Other local treatments

The other type of local treatment frequently discussed by interviewees, was massage, mainly used for pneumonia. In Hausa it was termed *‘kamu’*, meaning *‘to catch or ‘to touch’*, or specifically *‘kamun awazzai’* meaning *‘catching of the ribs’*. In Djerma it was referred to as *‘moruyan’* or *‘nanuyan’*. Such massage appeared to be more common in Madarounfa than Kollo and was usually practised by older women or malams.

If you get pneumonia, you don’t stay here, you go to the health post. There is no Hausa medicine, but once it catches you, some children go to the old woman who prays and touches the ribs. The woman does her prayer from the Koran and she catches and prays for you, and the child really feels better. She does a little prayer, and then she spits on her hands and rubs them together and then she touches the ribs. She pulls the ribs a little bit so that that it’s all together [so the ribs are properly aligned, this pulling is the ‘catching’ motion]. When you go to her and give her money she doesn’t take it, she is just doing this. In this season we give ground nuts or millet as thanks.

We call the old woman to do the catching. We can go to her house, or if the child can’t walk then she comes here. She is just being helpful. She is old and can hardly walk herself. We see her pray and ask may Allah heal, and she prays in front and behind and then she touches the ribs. If it is a girl she does it twice a day for four days. If it is a boy, then for three days, and if Allah brings easiness the child feels better, it helps.

Older women go to the old woman for catching. For younger children, the malam does the catching and you can ask him to beg to Allah for you [to pray]. If you take the child two or three times then you give him 750-1000CFA. For the old woman you go three or four times and you give her 1250CFA.

Also in this context, *‘catching’* may refer to the treatment of other aspects of women’s health, such as vaginal infections, as suggested in the above quotation, *‘women go to the old woman for catching’*.

Malams also *‘catch’* the head. As fathers in the focus group in Madarounfa explained,

Father 1 – it is the older women who do the catching here, not really the younger women.

Father 2 – it is when the chest is trapped

Father 1 – also there is catching of the head, and men do that

Father 3 – for a headache, you go to the malam. They hold the head and say a prayer, spit and write on the ground and then they touch the head with the sand where they wrote. It is the Islamic malams who do like that and it helps very well

Father 4 – it is mainly for headaches, but also for evil spirits that are disturbing the children, or if they can’t sleep. Or if the brain [fontanelle] is falling inside the child’s head [fa’dawa ma’diga].

Father 3 – you can pay, but is also an offering, about 25CFA

Father 1 – and the same for old women, 25CFA, and some kola nuts if they don't take the money

A mother in Kollo described another local treatment for pneumonia and 'body break' (*gaham kosi*), often the first debilitating symptom identified in young children. Instead of massage, she explained,

There is a man in the village who can pray for the child and attach a linen bandage [haw da zara zara] around the child's chest. It is just for the chest of the young children. When the man comes to the house you pay him 200CFA and it helps.

When discussing forms of local treatment, two other practices were raised. In Madarounfa, *relais* in the health workers focus group discussed the practice of removing children's tooth buds (a practice found in both East and West Africa, see for example [25]), and also snipping a child's tonsils, which again may be related to a falling fontanelle.

HW 1 – most of the time they take children to the malam or spiritual healer for teething or headaches

HW 2 – and for teething they also take out the tooth buds

HW 3 – and they take out the tonsils

HW 4 – what is that sickness that can't be cured at the hospital?

HW 3 – when they have headache and their head falls, it comes down from the middle of the head, that is when they have the tonsils removed

HW 4 – it is not the malams who do it, it is the traditional barbers. They have a hook and they pull up the tonsil and then it is a very small amount they cut off. Sometimes the child faints.

HW 3 – if the child drinks milk it can come back

HW 1 – this is illiteracy, lack of knowledge.

In addition, a mother in Kollo described being sent to the village blacksmith (*zamey*) in order to treat her child's burns. This was confirmed by the *relais*, who concluded that it was usual practice for the health post to refer burn cases to the blacksmith.

I went to the health post last month when the child was hurt by the fire. It was a hot sauce that fell from the pan on the fire, and I went to the health post because I wanted a dressing. But the health workers said they couldn't do that because it was a wound from the fire, and they told me to go to the blacksmith, to the man who makes things from iron. I went there and the man did a prayer and gave some powder on the burn. I paid 2500CFA. The money was with my husband and we paid after the child had recovered. She is fine now [has a large white and red scar on her thigh]. When the health centre did not help it was no matter, because they said to go to the blacksmith, and I was satisfied with him.

Pharmacies, chemists and medicine vendors

Aside from health facilities (discussed below), biomedicine was available from a range of 'informal' vendors in both Madarounfa and Kollo including shops and trading stores. A mother in Kollo confirmed, 'there are many little shops in the village where you can buy medicine and they sell other

things'. Similarly a mother in Madarounfa concluded, *'The shop is just there, it is not far. They always have what you want. They also sell rice, cassava, macaroni, canned fish and oil'*. Mothers mostly discussed buying pills from the shops or traders. As one interviewee in Kollo explained,

I always get medicines from the little shop. It is 100CFA for a packet of 10 pills, or two pills are 25CFA. For babies, they cut the pills into four parts and then grind one part and mix it with water to give. For one year olds, they cut the pills in half and give one part mixed with water.

There were also informal medicine vendors who were trusted members of the community. In one village in Kollo, a village councillor owned a shop that sold medicines and other household supplies, whilst in another, an 'old student' (*lakol izey zeno*) with some training (*cawandi*) had established a small informal pharmacy. Both offered basic medicines on credit to their customers.

Most frequently discussed were 'bicycle chemists'. Known as *'yan kemis* (literally 'chemist children') in Hausa and by the description *safari nerekoy kan go velo bon* (medicine vendor who is on the bicycle) in Djerma, these informal vendors moved from village to village on motorbikes or pedal bikes selling a wide range of pharmaceuticals. In their focus group discussion, health workers in Madarounfa explained that such bicycle chemists were often Nigerian medical vendors with imported medicines. One mother, for example, described how she routinely bought a medicine called *'Kuturus, it is a good pill that they sell here'*. When she showed it to the research team, it was paracetamol made in Ghana.

In some cases, respondents presented at the shop or vendor to describe the symptoms, *'if the child has fever, we ask for the medicine for fever and the chemist person will give it to you and tell you how to use it'*. At other times, interviewees explained how they purchased the medicine they thought best fitted their child's symptoms, *'when we see the chemist in the field, we just ask him for the medicine, since we know what we want'*. Their actions were based on previous experience, on hearsay or on trying to replicate medication previously prescribed by a health facility. Such self-diagnosis raised risks of misdiagnosis and mistreatment and in confirming the practice of only buying *'the amount you can afford'*, respondents highlighted the occurrence of incorrect dosage, especially given that several family members may each take part of a course of medicine.

Yesterday my daughter was in bed with stomach ache. We both had malaria and a headache. So I bought medicine from the seller, from the chemist who passes by on market day. You get what you can and they just give the medicine to you, for 50 or 100CFA. Yesterday I got 100CFA and we all took the medicine, for malaria and headache. There were two different pills for 25CFA and I bought 4 sets. My daughter took one set yesterday and I took two sets last night and then another set this morning.

Although a couple of interviewees in Madarounfa and Kollo suggested that it was possible to present a prescription from the health facility to the shop or vendor, most confirmed that this was not acceptable practice. As a mother in Madarounfa explained,

You can't give a health post notice [prescription] to the bicycle chemist or shop. The medicine people [health workers] complain if you use that medicine, they say they can tell the difference from theirs. You have to take the notice from the pharmacy in Maradi. At the chemist, you can pay 150-200CFA

and get something, but the cheapest is not always the best, and even with the chemist, everything has its price.

Several respondents claimed not to use medicine from informal vendors as they had no training, and did not 'trust' the medicine. This was particularly true for bicycle chemists, who were thought to sell medicine that was 'dead' (*ya mutu* in Hausa) or 'finished' (*ya kare aiki* in Hausa) meaning it was expired or past its best before date. As fathers in the focus group in Madarounfa explained,

Father 1 – you can buy everything and anything. If you take something and it doesn't work, then you take another or another

Father 2 – if you want to get strong for work, then you can buy something to make you strong

Father 3 – if you ask them, 'do you have medicine for fever or headache?' they say 'yes'

Father 1 – it is cheaper to buy from the bicycle chemist because we are very poor, but the medicine from the pharmacy or shop is better, that one is under the shade whilst the chemist goes all over with his bike in the sun

Father 4 – the chemist vendor is a major problem because their medicine can sometimes expire, and people don't know it as we can't read, then the situation can get even worse.

The health workers in the focus group in Madarounfa also stressed the risk of medication from chemists and other vendors,

HW 1 – we all have chemists that come, they go from one village centre to the next

HW 2 – we want to stop them from coming

HW 3 – sometimes their medicine has expired

HW 4 – and they don't even know that they give

HW 3 – and even if they do know, the sun has affected their medicine

Although the parents interviewed recognised these risks, for many obtaining medicine from a chemist or vendor was their first treatment option, as it provided a quick and convenient solution. One mother in Kollo explained, *if I am late for the health post [e.g. late in the morning when the queue at the health post was long / late in the afternoon when the health worker may have left / late at night when the health post was closed] then I automatically go to the chemist to get pills for the fever*. Another confirmed, *'when I see the child is sick, if they have a fever, I do home medicine, and then I go to the shop for a quick way, and then if they are not better, I go to the health post'*. Similarly a mother in Kollo concluded,

I get medicine from the chemist or the shop, I don't always go to the health post. I go straight to the chemist for fever, malaria fever and pneumonia before going to the health post. I go to have a solution immediately for my child's illness. When I go to the chemist I ask what kind of medicine is good for the illness, and they give it to me. For fevers I buy paracetamol for 75CFA for a one packet of ten pills, and for malaria and rash [fitti] then I buy cotrim [sulfamethoxazole-trimethoprim] for 125CFA. I always go to the chemist before the health post. The medicine from the chemist is just to reduce the illness before going to the health post if the child does not get better.

If a health post or health centre prescribed medicine, participants from Madarounfa would present the prescription at a pharmacy in Maradi, and those from Kollo would present it in Niamey. No interviewee had gone a pharmacy, unless it was upon referral from a health facility. Prescriptions (*a rubuto* in Hausa, literally ‘to write for’, and *tira* in Djerma) were routinely issued if a health facility had a stock-out of free medicines (discussed below). In such instances, access to medication was dependent on the feasibility and likelihood of access, in terms of cost, transport and distance from home to the pharmacy. Whilst mothers were able to buy directly from vendors within the village, or often sent other children to purchase medicine for a sibling, it was usually a child’s father who dealt with cash transactions within the community, and certainly outside the village locality, when, for example, medicine had to be bought from a pharmacy in town. Frequently, respondents would explain how the father would give both prescription and money to ‘someone outside’ or a ‘driver’ (often a taxi driver known to the family) to buy the medicine and deliver it back to them in the village. In such cases, instructions about how to correctly administer the medication were at risk of being misinterpreted, and there was often a delay of a day or more between being given the prescription and receiving the medication. This, and the associated expense (both direct and indirect) often resulted in parents not acting upon a prescription, leaving the child with partial or no treatment. The following quotations, the first from Madarounfa and the two from Kollo, were representative.

Twice it has happened that we had to go to the pharmacy, but we didn’t. Instead we just came home from the health post and got some medicine from here, from the chemist.

If there is no money, then you wait until Allah sends money. Sometimes you wait and don’t buy. The day before yesterday, we had no money to buy medicine, so I have kept the paper here in my things, and I pray to Allah.

I have only bought medicine once, so I leave the children [untreated] all the time. The last child was ill one month ago with a rash. I took them to the health post and they gave me red lotion for the rash and made a notice [prescription]. But when I came home, my husband wasn’t here, so I talked to his father and he said there was no money. So I used the lotion, it was free, but I didn’t get the other medicine. I didn’t feel well because I didn’t have the money to buy the medicine for the child.

Often the mothers interviewed did not know the cost involved in obtaining medicine from prescription, and were totally reliant upon their husband’s provision. As this mother in Kollo explained,

I went to the health centre a few days ago because one of the children had malaria. They gave me pills that were free and they wrote a note. I took the note and came home, there is no money for medicine and the only place to buy the medicine is Niamey. I came home and told my husband about the note. He said he would get the medicine when he has money. The child is ok now. If my husband finds the money he could still buy the medicine, but I don’t know if he is still looking.

Financial constraints such as this, clearly impact care-seeking behaviour, decision-making and agency to act (further discussed below) and encourage the use of treatment that is immediately available in the vicinity (plant medicine, traditional or spiritual healers, chemist and informal medicine vendors).

Several health workers in the focus group confirmed, *'when we write a prescription they won't buy it'*, and as a father in the focus group in Madarounfa concluded,

There are cases where they write the paper and we come home. Then, if the situation is not too bad, we throw the paper away and go back to the health post when we think the free medicine is back.

Health facilities

Overall, respondents demonstrated an overtly positive attitude towards health facilities and biomedical services. The research attempted to identify and purposively select participants who did not interact with health services for child illness, yet all participants had presented at the health post or health centre at some point in their medical history and were engaged with biomedicine, even if they did not routinely attend clinics for child illness. Medicine and health services were seen, in general, to have had a positive impact bringing improvements in health and well-being to the community (discussed further below). As a mother in Madarounfa explained, *'I am happy with the health post because it treats us well, they give good information about family contraception, about pills and plastic things [condoms] and my children can grow up well'*.

Care-givers recognised that the training and knowledge of health staff was beneficial, *'the health workers have knowledge and can teach us about illness, so I quickly go to the health post for all illness'*, and many mothers confirmed they now attended for ante-natal care, *'we learn from the hospital, they teach us all the steps, we all go there now, a pregnant mother with any slight problem will run there for help'*.

Although a *relais* in the health workers focus group in Madarounfa suggested that being scolded discouraged attendance, *'If we give a prescription, they don't collect it from the pharmacy, but they go to the chemist to buy, and don't come back to the health workers because they know they have done wrong and will be yelled at'*, most respondents spoke favourably about health staff attitudes and confirmed that even negative attitudes did not preclude care-seeking,

Everything is from Allah, but this health post is really good, and the lady there is really good. She even gives her own money for us to the medicine, or if there is a problem she lets us pay later, and she helps us very much, she helps us because she looks for the medicine even if she doesn't have it there. The workers speak very well and their work is good.

The health post treats us very well. You know everybody has their own attitude, and they will yell and fuss, but it is for our own benefit. If they tell it like that, I really think about it when I get home, the reasons why they yelled. There are no problems going to the health post, sickness is everything.

If there is no money and you don't buy [the prescription] and go back to the hospital, then they [the health workers] complain and complain, but what can we do if there is no money? When the staff complain you plug your ears with cotton balls, because you need their help and you will go back tomorrow, so you can't mind it.

The health post is nice, but the workers sometimes scream at you or ignore you and continue their work. It doesn't stop you going as you are looking for their help, so you are patient until they do their work.

Similarly, long queues, 'we each had a ticket and there were 70 patients in front of me, all the benches were full', and extended waiting times, 'even if you arrive in the morning, you sometimes have to wait until 2pm, the time of the Azahar prayer', did not appear to prevent care-seeking at health posts.

In a number of locations in both Madarounfa and Kollo, community members expressed a choice of health facility, and this led to interesting discussions in both interviews and focus groups, as the choice made was not always the most obvious option, and distance, area, likelihood of immediate treatment, and type of treatment were influential factors.

Sometimes if you go to the one that is near, they refer you to the small hospital in Maradi. The closer health post is Kurya. If you leave at seven then you can arrive at eight in the morning. It has three rooms and two workers. But I prefer to go straight to Maradi as it is bigger and the head is more knowledgeable [kai ya hi wayewa]. There is always medicine in Maradi, although it is further and you need money in your hand.

Here we go to Madarounfa and if things don't work then we go to Tokarawa. You get more injections in Tokarawa than in Madarounfa. If the child's fever doesn't go down with medicine, then after the injection it will go down. Sometimes if we don't get what we want at Madarounfa, then we go Tokarawa. It is appropriate for us to go to Madarounfa first because it is in our area. Tokarawa is in a different department, but Madarounfa is further away.

Father 1 – we go to Kouré, then Koddo, then Sina Koira

Father 2 – now more people go to Sina Koira than Kouré, it is a health post

Father 3 – if we go with the cart, it takes one hour

Father 4 – sometimes if it is urgent, then we use the motorbike

Father 5 – to take the child by motorbike is 2000CFA return

Father 2 – if the doctor from Sina Koira says we have to go to Kouré then we go by motorbike, but Kouré has a problem, it is too far, and the bike can only take you on the road, and Kouré is 2km into the bush, so then you have to walk

Father 1 – the preference is to go to Sina Koira because it is in the same department as this village, even though it is further away.

The above three examples were all drawn from villages that did not have a health post in their vicinity, but even in villages that did, choices about where to access health services were raised. As a health worker in Madarounfa explained,

Most women now like to come to the health post. The ones who don't come here, go to another location, to the health centre at Jiratawa, where they give plumpy [plumpy'nut]. The mothers only get it once, but they think they might get it again, so they prefer to go there. It is 5km on foot, but they still prefer to go for the chance to get plumpy. And then the workers in Jiratawa call us to say, 'are you not open?' and we say we are open, then they ask 'so why are all your women coming here?'

All participants knew that medicine was supposed to be free for pregnant women and children under five. Whilst the majority acknowledged that free medicine encouraged their attendance, *'in the past we had to pay but now for children under 5 we don't have to and this has made a difference, it is helping us'*, many also concluded that their care-seeking behaviour was different for children over five, whom they were less likely to present at a health facility. Similarly, supply-side problems, particularly the lack of medicine and frequent stock-outs that necessitated buying medicine from prescription, were repeatedly emphasised by participants (discussed further below). As a mother in Madarounfa concluded,

There is a long wait and sometimes the madam isn't there if she has gone to look for more medicine, but then it just runs out. We still go, the queue doesn't stop us. The only problem is no medicine. When the lady says there is medicine, then everybody goes. But we have a problem here, because it can all go by tomorrow, even if there was some today. The madam is really trying, but when the free medicine for the children runs out, there is really a big problem.

Decision making and agency to act

It was usually the mother, as primary carer, who first noticed a child was ill, and informed the father. In terms of treatment-seeking, in the majority of cases, it was the mother who presented the child at a health facility. She made and administered home plant medicine, and occasionally bought medicine from the informal vendors (stores, traders, bicycle chemists) although, as discussed above, the father was usually in charge of all monetary transactions, particularly those outside the village, such as buying medicine from prescription at a pharmacy in town.

In general, fathers were supportive of health facility attendance in both Madarounfa and Kollo. Several participants commented that it was their 'duty' or 'obligation' [*wajibi* in Hausa, *himma* in Djerma] to enable a child to receive treatment, and a father in the focus group in Madarounfa concluded *'you must buy medicine for both your children and wives, unless you are useless and ineffective'*. On occasion, fathers also took children to the health facilities, if the children were older, their wives were away, or if the facility was outside the village. In their focus group in Madarounfa, fathers explained they sometimes had to actively encourage their wives to take the children,

Father 1 – with the small children, the women know more, they take more care, but with the older children, then the men know as much

Father 2 – you have to fight [fada] to take the child to the health post if they are ill, fight to get a car or motorcycle to take the child

Father 3 – sometimes you have to push [tura] the wife to go

Father 2 – it happens that women don't want to go, they give all kinds of excuses, some lie to you and say they have been busy, and then the father must hurry to take the child. It can be laziness from the mother.

Father 3 – and sometimes the women don't like to be scolded by the health workers for not taking the child, it is because of them that the child is ill, if they have not washed the child or put them under the net and the child has fever.

The role of some fathers in treatment-seeking was also acknowledged by the health workers in Madarounfa. As one explained during their focus group discussion,

The men do agree with women coming for treatment with the children. But some men are more responsible than their wives, they notice the child is sick first and take them straight to the health centre. They ask how to give the medicine and they do it themselves before work or going to the farm.

Occasionally, both parents would attend the health facility together, particularly if the child was referred and had to be admitted. A mother in Madarounfa explained,

My husband took the child to the hospital, but when they held him there, I went on a motorcycle. The husband sent a message for me to come. The driver he had gone with came back to give me the message, but then he couldn't take me, so I had to find another driver to take me and the baby. Their big sister took care of the other children. I had to find the money to go, so I went out to do some pounding work [pounding millet] and then I borrowed 400CFA from an older woman in the village. I got the money and went the same day, it cost 500CFA for me to go by bike, and then we all stayed in the hospital for five days.

The decision to seek treatment was usually that of the father or household head, and was part of the accepted decision-making paradigm in both Madarounfa and Kollo. As one mother in Madarounfa emphasised, *'you know how men are, even if you want to do something as a woman you can't. Women won't make decisions to do things, to do things if the man doesn't say so'*. The majority of mothers interviewed had to seek permission to leave the family compound, to attend a health facility or otherwise. Another mother in Madarounfa explained, *'we have to ask permission to go out, and if they [the husband] tells us yes, then we can go, even if it is to congratulate people who have had babies we have to ask'*. One other recounted how her husband had previously not allowed her to attend the health facility,

We really want medicine. The problem was from my husband before, but now it is not a problem anymore. Before, when I asked him for permission to go out to the hospital he would say no, thinking I was going to the spiritual healer. He was strict [tsanani] and thought there would be some wickedness [maida] towards the co-wife. But now, with all the information he has from the relais, he doesn't stop me. It is the same for other men, things are now better and there is no man left who does not let his wife go.

Other mothers, however, affirmed that their husbands 'always' gave permission to attend the health post when their child was ill, and in a couple of cases concluded that for child illness, they did not even have to ask to visit the village health post. One mother in Madarounfa reported, *'He is always supportive. If I tell him the children are ill, he never refuses and now, if I don't go, he even complains'*, whilst another mother in Kollo concluded, *'I am free to go to the health post if the child is sick, or I am sick, at any time I can just go without asking, my husband gives permission all the time'*. If the father was absent, then a mother would seek permission from the household head, usually her father- or brother-in-law, or as in a number of cases, her mother-in-law. In a couple of cases where the father was working abroad, the mother would gain his permission over the telephone, but would frequently need to look to his family for support. If the health facility was outside the village, for example, the

mother and child would be routinely escorted by another family member. In only a few cases, was the mother allowed to travel unaccompanied.

Asking permission was also closely related to financial considerations in seeking care. Many mothers explained that their husband was happy for them to seek treatment when it was free, but that problems arose when money was required, either for transport, to buy medicine from prescription, or for the care of a child above the age of five (discussed above).

Needing to seek permission to leave the family compound is an aspect of the restricted movement of women in Niger that has been well documented [26], yet women 'find ways of resisting and bending the rules when seclusion and obedience do not suit them'. As a mother in Kollo concluded, '*a mother's health is her child's health, and when you haven't health, you cannot think about anything else*'. In several reported cases, women did not wait for permission from their household heads, but took immediate unilateral action.

Some men give permission but others don't care, or ignore the problem, so women just go, they don't wait. In the case of my older sister, her husband did not care, so she took the child to the hospital herself. She had to spend 40,000CFA and had to ask us to sell a goat to pay for the bed so that she could leave the hospital when then child was better. Her husband was not angry – it was not his goat.

HW 1 – if they are given a prescription and the men are not in town, then the woman can take responsibility to look for money and pay for the driver to get the medicine.

HW 2 – Some men, even if they have money, they don't want to support the wives

HW 1 – we had a situation two days ago, the woman needed medicine for the child, but the husband wouldn't give the money. He said, 'just go and leave me alone, I am not involved'. So the woman had to sell her own clothes.

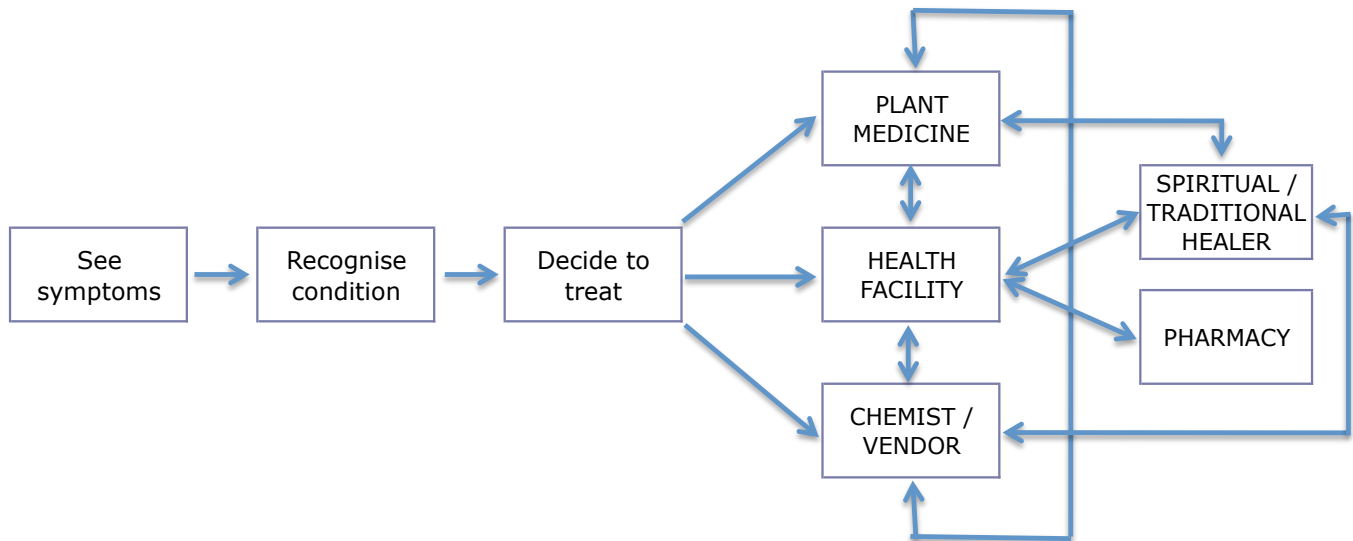
Pathways of care

Respondents conveyed a range of determinants that influenced their care-seeking behaviour, and it was clear from their narratives that parents were making pragmatic choices in an attempt to make the most of their constrained circumstances.

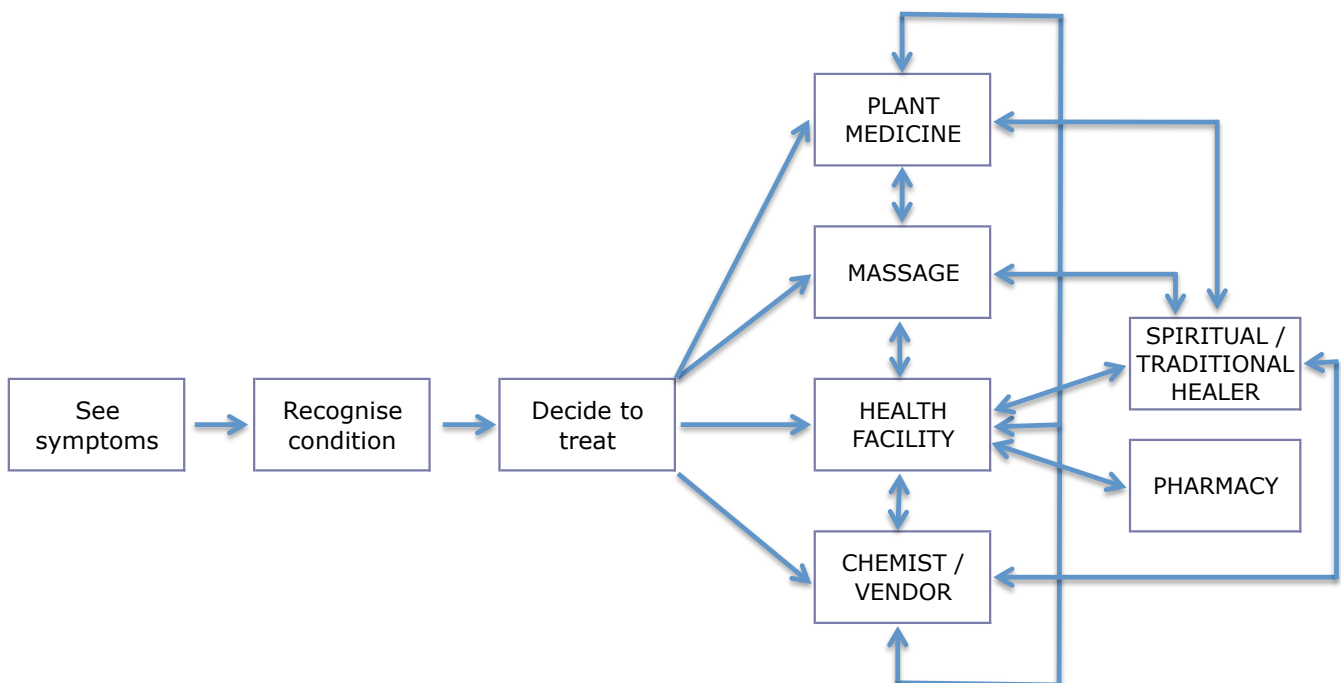
Care-seeking for malaria, diarrhoea and pneumonia in Madarounfa and Kollo followed similar yet distinct pathways that incorporated a range of treatment sources and healthcare options. To graphically represent the pathways identified risks over simplification. Diagrams cannot fully take account of the variety of influences that impact when, where and why treatment is sought. Nor can they accurately represent the ways in which different treatments are sought in parallel or the flexibility and non-linear nature of care-seeking. With these caveats in mind, however, the following may be useful guides to better understand how carers in Madarounfa and Kollo navigate the treatment options that may be available to them for the three childhood illnesses.

Diagram 1 – Pathways of care, Madarounfa and Kollo

Diarrhoea and malaria



Pneumonia



Community perceptions of changes in child mortality rates

Niger has achieved a staggering reduction in the mortality rate of children under five [12]. UNICEF was interested to explore if community members recognised the decrease that is so evident in the statistics. To this end, a series of questions was added to both the interview and focus group discussion frameworks to address participants' perceptions of the rate of child mortality and determinants influencing changes in the rate over time, should any change have been perceived.

The following charts indicate the responses of 11 mothers in Madarounfa and nine mothers in Kollo who were able to meaningfully answer questions about the rate of child mortality in their village. Questions such as 'how many children die' and 'do fewer die now than in the past', however phrased, are highly subjective, but may be indicative of community experience.

Diagram 2 – Community perceptions of changes in child mortality rates, Madarounfa

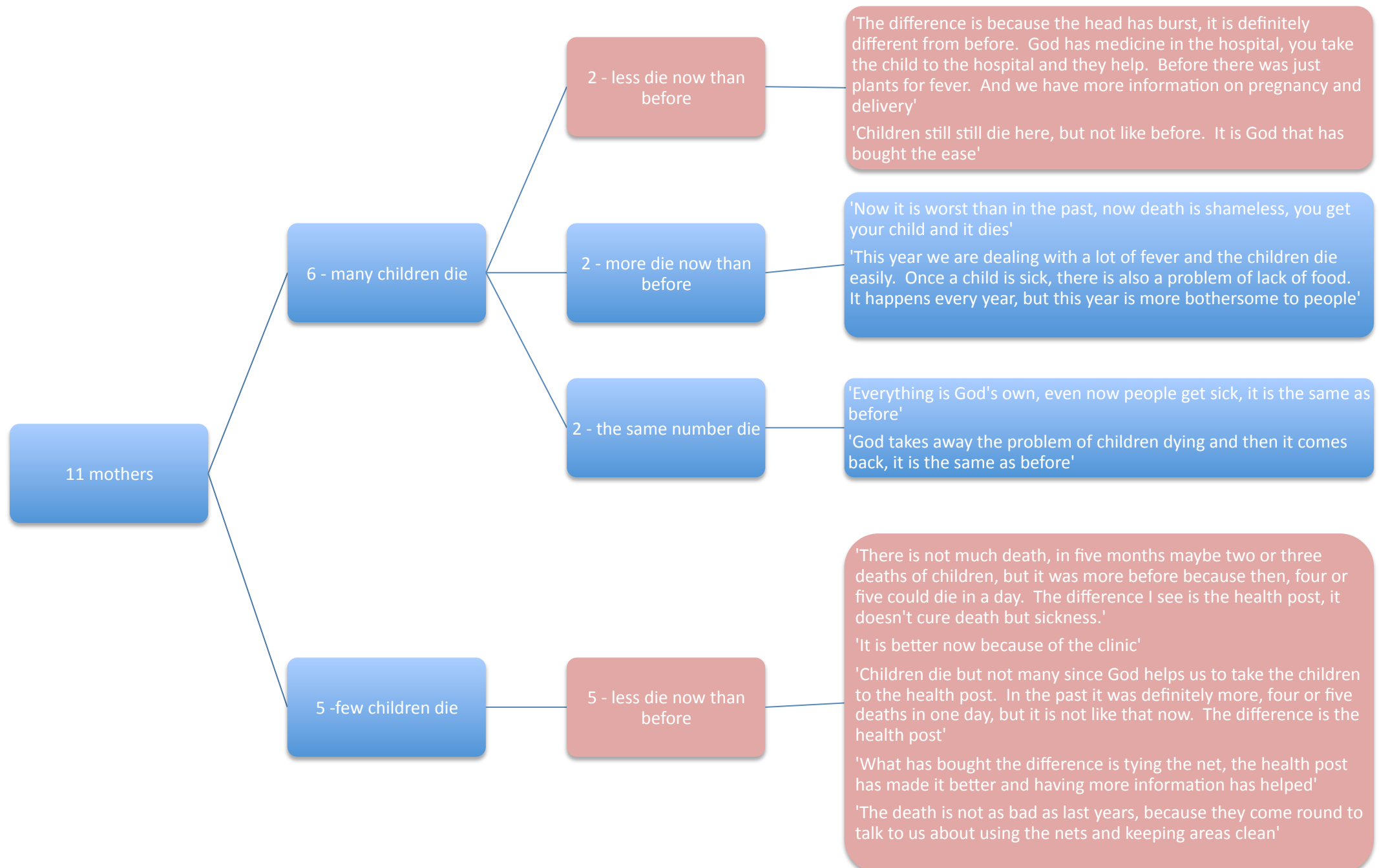


Diagram 3 – Community perceptions of changes in child mortality rates, Kollo



In Madarounfa, of the six mothers who said that many children die, three had lost between one and five children themselves, and one had suffered a miscarriage. Of the five who said that few children die, two had lost two and three children each, and two had had a miscarriage. Of the seven mothers who replied that less children die now, six lived in villages with a health post and two lived in villages without. Fathers in the focus group in Madarounfa concluded that many children die, particularly in the raining season, but less than in the past.

In Kollo, of the five mothers who said that many children died, at least three had experienced the death of one or more children themselves. Of the five mothers who replied that less children die now, three lived in villages with a health post, and two lived in villages without. Fathers in the focus group discussion in Kollo concluded that few children die, and less than in the past.

Reasons given by way of explanation for the decreasing rate of child mortality included: increased access to medicine and health facilities; increased knowledge and information about appropriate care-seeking including community health education offered by the *relais*; increased access to bed nets; the Will of Allah; and for one mother, the polio vaccine. These reasons reflect the three aspects of increased high-impact child survival interventions (as outlined in the Introduction): increase in the provision of services and community management; increase in access to free treatment; and increase in geographic access. The following quotations, outlining reasons accounting for fewer child deaths, are representative,

It is really better now because of the health post, it doesn't cure death, but it does cure suffering and even if you have no money you can still go there. Definitely there is a difference. In the past, we had to go to the other health centre and if it was the child's time he died. We would walk to Sarkin Yamma on foot with the child on the back. We would leave in the morning and arrive at noon as it is a little bit far. The health post has been here for about five years, and really it is better now, thank Allah. When my child died we didn't have the hospital.

There was more in the past. It still happens that children die but not as much as before. What brought the difference is tying the net and sleeping under it. The hospital has made it better and having more information has helped, so now if the child is sick, we take them to the hospital straight away. UNICEF hired relais to help us, they talk about mosquito nets, washing hands before you eat and when you have finished, washing hands with soap.

Despite participants stressing their lack of access to free medicine (due to stock-outs at the health posts), they repeatedly suggested 'improved access to medicine' as a factor contributing to the reduction in child mortality. It appears that the policy of free treatment for pregnant women and children under five being in place and being widely known, is a positive determinant in itself, although it may contradict an individual's own experience of stock-outs resulting in their limited access to and uptake of medicine.

These are the results of a very small sample size, and community experience of changing rates of child mortality merits further research, taking into account potential predictors including: age; parity; education level; the experience of an interlocutor's own child dying; distance from home to health facility; and ease of access to medicine and medical services.



Barriers to care-seeking and treatment

Although the general attitude of communities in Madarounfa and Kollo towards health facilities and their services was encouraging, there remained several entrenched barriers that challenged timely and appropriate care-seeking. Throughout the interviews and focus group discussions, participants identified the barriers they encountered when seeking treatment for childhood malaria, diarrhoea and pneumonia. These were triangulated with evidence from the thematic analysis and five categories of barrier were delineated: financial; access; knowledge and information; socio-cultural and religious; and health facility deterrents.

Financial barriers

If there was a health post in the village with a reliable supply of free medicine for children under five, then there were rarely financial constraints on care-seeking. As a mother in Kollo explained, *'now it is easier, there is a health post in the village and many of the medicines are free'*, and another concluded, *'it doesn't normally happen that you have to pay for the medicine, usually there is medicine for treatment of children and it is free for those who are under five years old'*.

For many participants, however, financial constraints remained a major barrier to care-seeking. Several mothers stated that *'medicine used to be free, but now it is not, now you have to pay'*. As a mother in Madarounfa asked, *'you might get medicine for free, but if not, and you have to pay for it, then what will you do?'* For carers who lived in a village without a health post, financial outlay might be needed to access the closest health facility, and for those given a prescription because the health post had no free medicine in stock, expenditure was also required for transport to the pharmacy and for purchasing the prescribed medicine. Financial requirements therefore shaped care-seeking behaviour, and as one mother in Madarounfa concluded, *'it is all about the money, no matter how much zeal [kuzari] you have'*.

For malaria and diarrhoea, if the child is under five, then I just go to the health post first. If you use traditional plant medicine, it sometimes works and sometimes not, but for a young child I always go to the clinic first. If the health centre does not work then I will try home medicine, or if the health centre does not have medicine, then I will use the plant medicine whilst I look for money to buy the medicine from the [bicycle] chemist, there is not always money to get the notice [e.g. from the pharmacy]. For the older children, I don't go to the health post, but try other medicine first.

I don't use plant medicine because I go to the health post. But all the time, there is no medicine there and the doctor [health worker] always writes a notice. I go to the health post because the worker knows what is good for us and he is instructed. It is only after seeing the doctor, if there is no medicine, that I go to the chemist with the paper. Sometimes I have money to buy medicine, but at other times I have to go home and look for money and it may take a while.

A mother in Madarounfa confirmed, *'when children are sick, the men are happy to get medicine, it is only when money is required that there is a problem'*. A few mothers claimed to be able to use their own money (generated through small businesses) to seek treatment, but the majority were dependent on the husband's provision. Several reported that you needed to have 'money in hand' to attend a health post, and suggested that they rarely considered presenting the child if they had no money. One mother commented, *'if you go to the health post with no money, then the child can't be treated, you can't just get up and go'* and another concluded, *'if I know one of*

the children is sick I try to search for the money first before going to the health post because I know I will need to buy medicine for the child'.

Some mothers discussed receiving 'gifts' of money, or cash distributions, and several explained that it was possible to borrow money from the community to fund treatment.

You can borrow money in the village, from people who see Allah and help you so that you don't go to the ground [don ka ka je kasa – you don't lose everything]. If you have a need, you can go to the person and kneel and beg them to lend to you. You tell them everything, your whole stomach [e.g. the whole situation, your inner self] but then sometimes they don't have the money to lend. You have to repay, but it might take a few months or years. We borrowed 5000CFA for treatment. We have not repaid it yet, but we have the intention, from the farm we will pay with millet or groundnuts. If not in things, then we will work for those people, pounding or chaffing their millet.

There is no problem with the children you don't have to pay for, but I took the youngest child to the health post one week ago, and I needed to pay 1100CFA. I didn't have the money, so I came back to borrow money from my in-laws, and then I went back. I can't pay it back now, I don't have the money, but when Allah provides, I will give it back. I was honest with the woman when I took the money and she said that I didn't have to pay anytime soon.

I don't know what the cost of medicine is, as the father pays. He does not tell me, only he says if he does not have the money. For the children under five, you don't need to find money first, you can just go and then, if they write a note, you come back to find the money. Last week, I told my husband about the note and he found the money. I don't know where from, he just came back with the medicine.

For others, there was no possibility of borrowing money, as they had no means of repaying the credit. One mother explained, '*If you borrow money and can't pay back it back then a fight starts*', and another concluded, '*I am at the point that there is no money, I can't borrow, so I just sit and look up to Allah*'. Lack of funds also had an impact on seeking local treatments. A mother in Madarounfa commented, '*I would like to take the children to the malam, but there is no money. If there is no money, then how can you go and ask somebody to do something for you?*' Frequently, the lack of financial capacity resulted in children not receiving biomedical treatment. One mother concluded, '*If your child is sick and you can't have the money, then you must leave the child*'. Similarly a father in the focus group discussion in Madarounfa stated, '*If there is no medicine at the health post and there is no money, then we are stranded and must leave the child at home*'.

It is worth noting that certain types of treatment were imbued with particular socio-cultural or religious significance that inflated their price far above both the direct and indirect cost of obtaining biomedicine. In several cases, participants confirmed that they had paid several thousand CFA to spiritual healers, and one mother concluded, '*for the Koranic malams to do the prayer, you have to pay and the charge is very high, up to 20,000CFA*'. This illustrates the comparative value of different pathways of care, and as one father suggested, '*when we know treatment is supposed to be free, we are not encouraged when we have to pay for it*'.

Access barriers (distance, transport and location)

For villages that had a health post within their locality, access to a health facility was unproblematic, and was rarely identified by the community as a barrier to care-seeking. For those who lived in villages without a health post, however, issues of distance, transport and location were frequently emphasised by participants.

The majority of respondents walked to their closest health facility, and as one mother in Madarounfa concluded, *'I am a poor woman, so my legs are my car'*. Participants were accustomed to walking long distances, but stressed the difficulty of taking a sick child to the health post on foot, and explained the need to prioritise what little money they had.

You walk to the health post. If the child is small, you put them on your back and walk. It is quite far and you have to leave early in the morning. They [the health workers] are already working when you get there. If you go on the bike you get there faster, but if you don't have money, you have to walk. It doesn't depend on how serious the sickness is, it depends on the money.

When we go on foot, you wake up very early and leave early in the morning, and we don't get there until the sun is high. You keep going and going and going and your legs hurt. We don't go on the motorbike because you need money to eat food when you are there, especially if they keep you [admit you or make you wait], so you need to take money to use for that.

Other respondents who hired a motorbike or shared car, had to factor in the cost of transport to access healthcare (as discussed above), *'there is no health post here, so all the time we need to have money to get a car to go the health post, that is the main problem'*. Modes of transport that did not include financial outlay included bicycles and ox carts. A mother in Madarounfa who had been referred from her local health post to the hospital in Maradi due to a complicated pregnancy, explained, *'We went on a bicycle as my husband is poor, so he borrowed a bicycle and pedalled and I sat on the back, it took two or three hours'*. In Kollo, another mother explained,

We went on a cart pulled by cows. The driver was a relative of my husband. Sometimes the cart is just a gift when you have a problem with health. If the man has charity he can help you with the cart and you don't pay.

But, as fathers in the focus group in Kollo stressed, *'at this time of year all the animals are in the field, and there are none to pull the cart'*. In addition, public transport was not always available when needed, as a mother in Kollo concluded, *'I walk up to the road, but sometimes when I get there, there is no car to take me'*. This results in delays that further exacerbate the practice of 'wait and see' prior to care-seeking. Similar issues were discussed by participants in relation to obtaining prescription medication from a pharmacy.

In addition to transport, distance to and location of the health post also caused concern. Many participants from villages without a health post asserted *'the problem is that the health post is too far, we need to have a health post closer to the community so we can take the children when they have sickness'*. This was a particular issue if children were ill at night, when parents had to wait until the next morning to access health services, and several respondents discussed children dying during lengthy journeys to a health facility, although such accounts were generally framed in terms of poor judgement leading to delayed presentation.

There was limited health outreach to communities without a health post, and in only one village in Kollo did respondents confirm that a team of health workers visited every month to provide ante-natal care for pregnant women, although opinion was divided as to whether they also provided any medical services during these trips. Many carers expressed their desire to have a more accessible health post that was closer to the village. As a mother in Madarounfa concluded,

It would really be better if there was a health post here in the village. Distance is a big problem for us. If we had a health post, then many more people would go for treatment. If we had a health post here, then it would transform [maida] children's health.

Knowledge and information barriers

Knowledge and information about specific conditions was reasonable in both districts. Respondents often made a causal link between mosquitoes, fevers and malaria, and preventative strategies, such as routinely sleeping under a bed net, were well known. Other key health practices, such as hand washing, were also widely discussed, although the relationship between diarrhoea, hygiene and sanitation was weak. Participants knew less about pneumonia, and many concluded that it was a condition of the chest or ribs. Generic terms resulted in common colds and flu being conceived as pneumonia, particularly in Kollo. In terms of care-seeking, the majority of respondents regarded the health post as a positive institution.

Health posts were also the main source of health education for many, although a number of interviewees suggested that they developed their knowledge through Allah, or instinctively as a mother. One mother in Madarounfa explained, *'the mother who sleeps with the child and spends the day with the child knows better as she is always holding the child. The knowledge comes from Allah, since when your child is sick, you know'*. Several mothers commented that they learnt about children's health, not only through their own experience, but through the experiences of others, *'because people mix with each other, you learn from them'*. Social gatherings such as naming ceremonies [*zanen suna* in Hausa, *cabay* in Djerma], were seen to be times when information and knowledge was shared within the community, *'when we go a naming ceremony or party, where all the women are there, then we talk about the children being sick'*. On the few occasions when mothers discussed more formal health education gatherings, several commented that they were not conducive environments to learn: some women were not able to attend; it was difficult to hear the speaker over the noise of the collected women; and some women were shy or intimidated to participate.

In the villages where *relais* were active, they were important sources of information and seen by participants to be very helpful, both in terms of delivering key messages, and supporting care-giving and care-seeking. As a mother in Madarounfa explained,

We get the information from those that bought you. There are four relais at the health post and they go from house to house asking us questions and we give answers. We really struggled with the information until we understood it from them.

Health workers also emphasised the positive role *relais* played in encouraging good health practices and appropriate care-seeking behaviour. In villages where there were no *relais*, particularly in Kollo, the difference in the level of knowledge expressed by the mothers interviewed was noticeably lower. In villages without *relais*, older traditional birth attendants

were often the only source of information in the community, and although some had received training, their impact on and ability to reinforce positive health education was minimal. The research team only encountered one male *relais*, but his work, particularly with male community members, was held in high esteem by both the wider community and health workers at the health post. In contrast, messages in the media, such as radio announcements, were rarely discussed by participants.

Despite these activities, the majority of respondents stressed their need for further information and health education. A number of mothers claimed that they did not receive any health education at their local health post, *'I don't get any information from the health post, when I go there, there is no discussion, they just give me the medicine I need and I come home'*, and in villages where *relais* were not active, there was no education in the community. As one mother concluded, *'Really there is nothing in the community, not here, not in the village, and at the hospital there is always a queue, and they only tell us to use the bed nets and wash hands'*. Similarly, there was limited health education targeted at men. Participants felt that, in general, fathers knew less about the health status of children than mothers and it was a common perception that *'men don't know, and they don't take time to learn'*.

Even when key messages were being delivered, many respondents concluded that they could still learn more, and as a mother in Madarounfa stated, *'Right now, there are still some people who are not quite there with the information'* (*'wasu bas u fa'do ga hanya ba'* literally 'some people have not yet fallen on the right track or road'). Health workers in the focus group also emphasised the difference between knowledge and practice, and suggested that 'illiteracy and ignorance' still hampered their efforts to deliver effective healthcare. One health worker concluded, *'sometimes you give free medicine and they don't take it, and at other times you write the paper and they don't get it, so both ways there is the problem that they neglect the child'*.

Socio-cultural and religious barriers

The restricted movement of women was not regarded by participants as a major barrier to care-seeking as male household heads usually gave permission for the mothers and children to attend the health post. As fathers in the focus group in Madarounfa asserted, *'All the men here allow their wives to go. In other places, if they don't, well, that is lack of knowledge, it is illiteracy, and that place must really be a village'*. Several participants emphasised, however, that although men may permit their wives to go, they did not always give the support required to enable attendance. Both mothers and health workers commented that fathers sometimes displayed little responsibility for their child's health, because, socially and culturally, the mother was the primary care-giver. Whilst this was not generalisable, and many fathers were actively engaged with their family's wellbeing, a number of respondents suggested that the division of roles was problematic.

Health workers also discussed 'traditional' practices and faith in local healers as barriers to timely care-seeking. This was less evident in the interviewee's narratives, for whom the use of plant medicine and informal medicine vendors was often a pragmatic alternative to the challenges of accessing a health facility and obtaining medicine on prescription. Because malaria, diarrhoea and pneumonia were not readily associated with local theories of causation, unless the symptoms were unusual or medicine appeared ineffective (discussed above), it was rare that traditional or spiritual treatment would be sought instead of biomedicine. More often, they were sought in parallel. One health worker did present a case in the focus group in which parents had refused

medicine in the belief that their child had been attacked by spirits, choosing instead to visit a Muslim malam. This led to a delay in biomedical treatment, the progression of the condition, and the eventual hospitalisation of the child, but such cases were not common.

I had a case where the child was sick and brought to me. I saw the anaemia was getting severe, so I wrote a prescription to go to Maradi, but they wouldn't go as they said they knew it is from the spirits, so they treated the child at home. But then the condition got worse, so they came back and asked for the paper again. They took the child to Maradi and now it is there [in hospital] but it is seriously ill.

Health facility deterrents

The dominant problem, repeatedly emphasised by participants in both interviews and focus group discussions, was the lack of free medicine at the health posts. A mother in Madarounfa commented, *'the health post works very well for us, thanks be to Allah, the only problem is the shortage of medicine'*, whilst another in Kollo explained,

I know there should be free medicine for the under fives at the health post, and if the workers have medicine they will certainly give it, but there has been no medicine for a long time for the children. Since I had my youngest child [three months old] there has been no medicine.

Similarly, fathers in the focus group discussion in Madarounfa described,

Because of the rainfall, children are always sick now because they are being bitten by insects and lose a lot of blood. Here, at the our health post, we don't have enough medicine, so we have to take them to Maradi and then they are already dead.

Several respondents discussed their preference for injections over pills, *'injections and pills do the same thing, but with injections the medicine is quicker in your body'*. This issue was further debated by health workers in the focus group in Madarounfa who suggested that the type of treatment offered sometimes deterred carers from attending and then complying with treatment.

HW 1 - when the mother comes to the health post, if there is no injection, then they don't take it seriously. Longer treatments with pills, they don't follow.

HW 2 - the big challenge is that they don't like pills, they would rather have injections. Some are so disrespectful [rashin kunya] that they just throw the pills on the ground, or if they have respect for you, they will take them, but then throw them away

HW 3 – I have picked them up. They believe the pills don't work, they just want injections. Even pregnant women don't always take the medicine, they just put it in their room and leave it there

HW 4 – they don't follow the treatment, you give them for three days and they stop when they feel better, or they give the medicine to he neighbour. And then they get sick again and come back to ask for medicine again, and you say 'where is the medicine?' and they say 'we don't have it'.

Although staff attitudes and waiting times were not deterrents to health facility attendance, several mothers commented that the health posts were understaffed (*there are not enough workers to care for women at the health post, and sometimes if a woman is in labour she has to come home again and then the child can die'*), offered limited services (*'there is a problem with the examinations, sometimes there are no blood tests'*), and that opening times restricted access,

particularly at night. None of the health posts visited admitted patients, with the exception of one in Madarounfa. A health worker in the focus group explained,

Parents bring the child to the clinic at the wrong time, like at 1830 when you need a break, but they will say, 'you medicine people shouldn't have a break' and we are cursed at [zagi] for asking them why they didn't bring the child earlier. 0730 to 1300 are the usual working times for consultation, but we accept serious situations at any time. The problem is when the child had diarrhoea the previous night, and they wait and don't bring the child until the next evening.

Health workers also discussed other elements of the health system that they perceived compromised the services they offered, including: remote or inadequate accommodation far from the health post; a lack of resources and transport for outreach services (including vaccination campaigns); and limited refresher training, something requested by all *relais*. In addition to the frequent stock-outs of essential medicine, other supply-side issues were raised by health workers, primarily a lack of equipment, such rapid diagnostic kits. They also found it difficult to match patient expectations, for example, in relation to the distribution of bed nets to pregnant mothers, and regarded this as impacting negatively on community willingness to engage with the health post. As one health worker concluded,

There is a shortage of medicine, all medicine, and we really need help with that. The children take all the medicine, and the Government says to give it for free, but then they don't provide the money to re-stock. If there are no drugs, then there is definitely no equipment. But once we have medicine, then everything else will come'.



Solutions to barriers identified

Having highlighted the barriers, difficulties and challenges faced by carers when attempting to access treatment for childhood malaria, diarrhoea and pneumonia, participants were asked to share ideas and possible solutions to the challenges identified. They were asked to suggest ways in which the barriers could be overcome, and encouraged to consider what would be needed, from their perspective, to enable carers to seek and access appropriate and timely treatment for childhood illness. Although some carers found it difficult to consider solutions in the abstract and were not accustomed to being asked their opinions, ideas and practical measures to improve care-seeking were raised throughout the interviews and focus group discussions, and these were analysed in relation to the empirical evidence collected.

It should be noted that the ideas presented here are not hard and fast ‘solutions’. The barriers identified are complex and entrenched – issues such as poverty and lack of infrastructure cannot be solved by health interventions or demand-generating activities alone. Rather these ideas, devised at the community level and from the perspective of the beneficiaries, should be seen as a platform upon which a series of ‘local solutions to local barriers’ can be developed. In this way, community-derived solutions may be incorporated into and supported by more systemic policy solutions. Programmatic implications are explored further in the discussion section. For ease of reference, the ‘solutions’ are presented according to the five categories of barrier identified.

Solutions to financial barriers

The blanket poverty and subsistence living faced by the majority of respondents ensured that, for many, engagement with the monetary economy was a continuous struggle and the possibility of saving money or contributing to a community funding scheme, to access healthcare or otherwise, was impossible. Only a couple of mothers discussed cash distributions, and none suggested this as a way of overcoming their financial constraints.

The only solution to financial barriers forwarded by participants, both mothers, fathers and health workers, was the economic empowerment of women. One mother suggested establishing a cottage garden for women in her community, whereas others were focused at the individual or compound level. The following quotations were representative,

The main problem is money, without money things are difficult. How to solve that problem is between the knowers and the knowers [in Hausa masana da masana – also meaning experts], or do you want my opinion? Then help is what we need. And if you help, then Allah helps you too. People in the village need help with money, with business. It would be good if we can do some small business, so there is money if the child falls sick, or we could sell something from our business to raise money when needed. Help the women with money to start a business, then they would use that money for treatment so the children don't die from sickness. Women can buy bags of rice and then sell a bowl or half a bag, and that may make a profit. Or they can buy ground nuts and make it into oil. There are some women who do this, they get jerry cans of oil on credit and sell the oil to make a profit, then they pay back the credit and still have money left. I would like to do that, that would help, so if my husband doesn't have money, then I could make some.

You need to help women with work and commerce, just a little. We need a little credit to start. If we had that then we could do better business and have money to buy medicine for the children's health. You can't really save, but with our own business, we could help the child.

Women need help with money to start small businesses, with oil and vegetables. Then the sickness of the children would reduce. Allah bring everything, but this would help the situation. As you do business again and again, then you make more profit and you can raise animals. That way, even if you have a loan and they come for it, at least you have money aside to pay.

There were concerns that any money earned would immediately be absorbed into general household funds, but several mothers who were already engaged in small-scale business discussed having their own money and being free to spend it on essential items, including a child's healthcare, as she saw appropriate. Other respondents suggested that even if a mother's money were absorbed, the level of household income would rise, and therefore financial barriers may ease.

In Madarounfa, small-scale business for women was raised as a solution to financial constraints more often than in Kollo. This may be due, in part, to UNICEF's community for development work in Maradi, one aspect of which is women's economic empowerment. Hausa were also perceived to be more business orientated than Djerma speaking peoples.

Solutions to access barriers

For villages with no health post, carers stressed the obvious solution to access barriers was to establish a health post in the immediate vicinity. Many participants also emphasised that a reliable supply of free medicine at the health posts would overcome challenges of access associated with the onwards referral to a pharmacy to collect medicine from prescription.

No participant discussed improving methods of transport to overcome barriers of access or distance, but several emphasised the need for outreach services. As discussed above, only one village in Kollo received a monthly outreach service to monitor pregnant women. Health workers based at the health posts visited did travel to other villages within their catchment area to deliver vaccinations, but were not always provided with adequate resources to do so. Expanding routine outreach services and improving support for health workers to provide these services was suggested as a counterpoint to issues of distance, location and transport limitations.

Similarly, the role of the *relais* was discussed by carers and health workers in both districts as an aspect of better integrating care into the community, thereby minimising barriers of access. In this model, *relais* would continue to provide health education and support, but their role would be developed to include tracing and follow up, and to actively encourage uptake of health services.

Solutions to knowledge and information barriers

To overcome barriers of knowledge and information, more strategic, targeted and sustained health education is required in both districts, and the need for health education was repeatedly stated by carers. As a mother in Madarounfa stressed, '*If you are alive, you always want more information*'. Although more health education was called for in general, including during

consultations at the health posts, participants' solutions to knowledge and information barriers rested at a community level. Another mother in Madarounfa concluded, *'It would help very well to have information here in the village, that would be easier and would raise awareness for the community as it has grown'*.

Although a number of gatherings were reported to include men, participants emphasised that most health education is directed at mothers, and suggested that specific health education activities be targeted at fathers and household heads. As one mother pointed out,

If only women hear this information, then the men don't take it seriously, but if the heads all come together, then they would understand. It is a good idea to teach the men, they must have knowledge to understand their children's health.

Several mothers confirmed that whilst they tried to convey information to their husbands, *'when I come home from the health post, I explain what they said, I explain the situation to my husband'*, it was important that *'the husbands are taught directly, in a group'*. In addition to key health messages, such as hand washing, using bed nets and birth spacing, mothers stressed that *'husbands must be told other important information: if the child is sick, do not stay and do nothing, and do not tell your wife that they are wrong about the child's illness'*.

For women's education, house-to-house was seen to be the most conducive format for learning. Many mothers commented that noise and distractions were unavoidable if women were gathered together and that key messages may go unheard or misunderstood. Several explained that whilst women were generally *'too busy to go out'* and house-to-house or compound-to-compound was therefore more appropriate, men *'are always out'*, so gathering them in the field or at the chief's compound was more likely. In announcing important information at a gathering, there was an inherent risk that some individuals would not be able to attend at the stipulated time or place, but neighbours would be able to pass on the information and there was seen to be benefit in collective knowledge sharing. Several participants were also wary that house-to-house would take more time and investment from health workers, and preferred to have information given in bulk to the community, rather than risk no information, should individual education prove unfeasible.

Participants made it clear that men and women should be taught separately, and although some claimed the gender of the teacher did not make a difference, as long as they had *'big knowledge and were gentle [meaning patient]'*, the majority stressed that *'men should teach fellow men, and women should teach their sister women'*. The need to be given education at regular intervals was also highlighted by participants. As a mother in Kollo explained, *'We would like it if somebody can explain things to us each season. That is the problem of illness, it changes, and we need somebody to remind us of what we will have forgotten from the earlier time'*.

Community education was universally seen as positive, and several examples of behaviour change resulting from health education were reported. As one mother in Madarounfa explained,

A girl came around with some papers and talked to the men about if a woman is pregnant, or in labour or bleeding, then they must hurry and take them to the health post. The men agreed with what she said. Then she also did a grouping for women and showed us photos and told us about each situation. She read the paper because she has had schooling. It very much helped. Now, if a woman is in labour, the men will ask what is wrong and they will quickly take her to the health post. There should be more like that.

In terms of overcoming knowledge and information barriers, *relais* were seen have the potential to make particular impact. Interviewees from villages with *relais* all spoke highly of them and again, examples of positive change, intrinsically linked to the work of the *relais*, were reported. A mother in Madarounfa described,

Before, in the past, my husband didn't always give me permission to go to the health post until the sickness was very serious. He would say 'lets just get something to give the child', but now he tells me to take the child to the health post. Before he would buy medicine for fever and headaches from the chemist, but now his thinking is based on information from the relais, so now he understands.

The research team only encountered one male *relais*, in a village in Madarounfa, and it was suggested by several participants and health workers that recruiting and training more male *relais* may help direct engagement with fathers and household heads, and would also provide a positive role model for male members of the community. The male *relais* explained,

It is not like when we go house-to-house to talk to the mothers. For the fathers, I have to go where the men are gathered and do it there. I also give them tea. The women listen better than the men. The men say 'I'm not listening to you, you are only talking to me because you are being paid for it', so I buy them tea, and we don't start talking straight away. We sit and drink the tea together, and then they will listen.

In the focus group discussion in Madarounfa, health workers concluded,

HW 1 – It would be good to find men to be relais, but men don't like to stay in one place, and they will want to know how much they will be paid
HW 2 – It doesn't really matter if it is a male or female relais talking to the community
HW 1 – actually, some women prefer a man to talk to them.

(In this vignette, Health Worker 1 was the male *relais*, and not many of his female colleagues appeared to agree with his final statement, although they did not explicitly contradict him).

Participants from villages that did not have active *relais*, in Madarounfa and particularly in Kollo (where community volunteers like *relais* were less evident), all suggested that having *relais*, with or without a health post in the vicinity, would be of huge benefit to the community. As one mother concluded, *'It would be good to gather the women and then pick a trusted woman who could help the others. It would be good to have that here, to have a woman like that who would go around to promote health'*.

Solutions to socio-cultural and religious barriers

Solving socio-cultural and religious barriers was closely linked to improvements in knowledge and information at the community level. Participants emphasised that men should be encouraged to take responsibility and provide adequately for their wives and children, and that this should happen in parallel to the empowerment of women, both socially and financially. In this way, men would be 'sensitised' to the health needs of their family, and would permit and support their wives to attend the health post. A mother in Kollo explained, *'When the fathers understand illnesses, they won't have opposition to give permission to go to the health post, and they will help*

us to go, even if they don't have money to give', whilst another added, 'You must encourage the men as a group, and try to explain that husbands must let their wives take the children to the health post'. A mother in Madarounfa concluded, 'I pray to Allah that if we teach men, He gives them ways to help us women'.

Other suggestions to mitigate socio-cultural barriers included greater involvement of the village chief and local leadership structures, and 'leading by example'. As a father in the focus group in Madarounfa explained,

Let's say that a man refuses his wife to go, but in the next house, the man allows the wife and child to go and that child feels better, then the first man, he will learn a lesson and he will be likely to let his wife and child go to the health post next time.

Participants also stressed the need to encourage health facility attendance whilst educating the community not to be reliant on local healing practices such as plant medicine or traditional and spiritual healers. Another father in the focus group in Madarounfa concluded, *'When you gather the men, you should talk about different things, on one hand you should say about things like mosquito nets, on the other, you should discourage them from going to the spiritual healer, as that is not good'*

Solutions to health facility deterrents

Solutions to overcome health facility deterrents focused on two related aspects: improving patient experience and improving service delivery. In both cases, carers and health workers alike prioritised the need for a reliable supply of at the health post, particularly free medicine for children under five.

Health workers also acknowledged that whilst some carers held perceptions with which they disagreed (such as a health post offering only a limited service or being understaffed, and the preference for injections rather than pills), these were best overcome through continued interaction and health education. They emphasised that staff must build a trusting environment to encourage compliance and adherence to treatment.

The lack of services available at night was an ongoing problem, and only one health post visited, in Madarounfa, provided an inpatient service. There, the health worker had been provided with accommodation close to the health post and was prepared to work out of hours. As she explained,

I have had the experience of keeping patients until they are feeling better, maybe for two or three days if the medicine is not working. If parents are reluctant, I show them how to take the medicine properly, and they like the treatment at the health post, they say so before they go home.

Such action was seen to encourage positive care-seeking behaviour and compliance with treatment, a problem that often frustrated other health workers. This health worker had built an extremely good rapport with the community who, in return for her service, had contributed both money and labour to build a cover for her latrine.

Community investment in the health post was also seen to be highly beneficial (and again, community initiative is an important aspect of UNICEF's C4D policy). One mother recounted that before the current health worker was in post, *'we had a gathering in the village so everybody contributed something, 25CFA, different amounts, to buy medicine when the health post didn't have any, and the fever was disturbing us very much'*. When asked about this, a *relais* from the village explained, *'the elders in our village are respected on every street, so they collected the money. If the elder gave 300CFA the people will be embarrassed not to give what little they can. It worked well and even if it happened again tomorrow it would work'*. Similarly, we were informed that in another village in Madarounfa, not one included in the research, *'the people all came together and contributed so now their health post has seven or eight rooms'*. Listening to these examples, other health workers in the focus group were stunned and stressed that such community investment was highly dependent on the individual village.

HW 1 – In my village, people wouldn't agree to do that, they would not put money all together to help sick children, only if they were getting something in return, and even then only a few people would do it

HW 2 – It is the same situation in my village, they would not give, but if there is a box of plumpy then they will all run for it

HW 3 – they take but do not give [suna amsa amma basu badawa].

HW 4 – the reason is that different people have different mentalities, people in that village are definitely nicer and more together than in my village. Some people are so proud of their village and want the best, others just don't care.

Several other suggestions were made to overcome health facility deterrents and encourage uptake of services. The health workers stressed that having a reliable supply of bed nets to distribute at the health post, would help match mothers' expectations and encourage attendance. In line with the comment made above by Health Worker 2, that mothers would run for a box of plumpy'nut, and the point made earlier that mothers attend a distant health post if they thought plumpy'nut may be distributed, fathers in the focus group in Madarounfa concluded,

Father 1 – you should bring nets to the health post and some food or plumpy and if you announce that, then all the mothers will rush there

Father 2 – you could gather the women in groups of twenty to talk to them at the clinic, and get the midwives and relais to convince them to go for medicine, but it would be nice to be bribed like that, then they would continue to go.

This carrot / stick approach had also been adopted by two health posts visited in Madarounfa where health workers had announced that mothers who did not deliver at the health post would be fined. Two mothers who attended that health post explained,

I went for my weighing [ANC] every three months and then I gave birth at the health post. You have to give birth there or they charge you 4000CFA, you are charged by the madam [health worker]. It happens sometimes that people stay at home on purpose and she say no, it is not your husband, it is you who must pay the 4000CFA. Sometimes women stay at home, or they only go half way, but the madam only fusses if you cut the cord before you arrive.

I had my babies at the health post. Very well we know that if a woman doesn't deliver there she has to pay 5000CFA as a penalty. How can you stay at home, where would you get the money?

Nobody waits to do that. They made an announcement that there would be a fine and you pay as you know about it and the health post.

When questioned about the penalty fine, the health worker confirmed that whilst she had created and perpetuated this idea, she had never charged a woman who had not delivered at the health post, and had no intention of doing so. Rather, the threat of the fine acted as a powerful ‘urban myth’ to persuade women to have a clean and safe delivery at the health post.

To overcome the limited operational hours and lack of service at night, participants suggested that suitable accommodation be built for the health worker close to the health post, to enable them to be ‘on hand’. Health workers in the focus group agreed that this would be useful. The fathers in Madarounfa stressed, *‘rooms should be provided for the medical people to sleep in. At the moment they come from the road to Maradi, and we want them to be here at night if something happens’*. Providing adequate resources to health workers in terms of accommodation and transport for outreach, and to *relais* in terms of remuneration and training, were seen to be ways to improve morale amongst health staff and improve service delivery.

Table 1 – Summary of community identified barriers and solutions suggested

Identified barrier		Suggested solution
Financial	• Lack of money • Cost of medicine on prescription (direct and indirect) • Limited empowerment of women (economically)	• Equitable economic empowerment of women (income-generating activities)
Access	• Distance (in villages with no health post) • Location (far from pharmacy, particularly for villages with no health post) • Lack of transport • Limited outreach	• Establish health posts in villages (where appropriate) • Develop outreach services and support for service provision in community • Improve access to free medication at health post (removing need for onwards referral to pharmacy) • Expand and develop network of <i>relais</i>
Knowledge & information	• Limited knowledge of causation, prevention and treatment (diarrhoea and pneumonia) • Limited health education at some health posts • Lack of strategic and targeted health education at community level • No <i>relais</i> in villages with no health post • Difference between knowledge and practice	• Strategic, targeted and sustained health education • Health education and demand-creation activities at community level • Involve male members of the community (as providers and receivers of information) • Expand the network of <i>relais</i>, develop their role as change agents • Evaluation of communication and health education strategies
Socio-cultural & religious	• Lack of support and responsibility from some male household heads in care-giving and care-seeking • Use of traditional practices including plant medicine and spiritual healers • Limited empowerment of women (socially)	• Educate and sensitise male household heads • Advocate health facility attendance (in preference to local treatment) • Social empowerment of women
Health facility deterrents	• Perception that health post is understaffed • Restricted opening times, particularly at night • No admission and limited services • Supply-side issues (lack of drugs, equipment and diagnostic capability; limited tracing and follow-up)	• Encourage investment from the community and community initiative • Encourage health posts to be seen as frontline in prevention and treatment of child illness • Change perception that health posts are understaffed and offer limited services • Use carrot /stick tactics to encourage uptake of services • Support health workers and <i>relais</i> (with accommodation and resources) • Supply side issues (manage resources to avoid stockouts and equipment shortage, improve diagnostic capabilities, enhance tracing and follow-up)



Discussion and implications

The care-seeking behaviour and associated barriers to treatment for childhood illness identified in this study are supported by similar findings in the other literature. There is limited published material on care-seeking in Niger, but there is a good body of grey literature, which supports the findings of this study.

As in this study, Kone [27] found that amongst respondents in Madarounfa, mosquitoes were known to cause fever, yet they rarely distinguished between malaria and other fevers until receiving a positive diagnosis from a health worker. Kone explains that 'fever' is regarded as an illness in its own right, and is linked to the dialectic of hot and cold. Frequently treated using plant medicines, participants in Kone's sample also presented at the integrated health centre if symptoms persisted. He suggests that respondents thought malaria was caused by multiple mosquito bites, not just one, and were therefore more likely to use mosquito nets during periods when mosquitoes were more numerous. He identified a low rate of net utilisation due to their unpleasant smell, causing a feeling of claustrophobia and retaining heat. These deterrents were not vocalised during our study, nor by Bara [28] who found high utilisation rates of bed nets in Maradi, Zinder and Diffa, where nets were regarded as an important household commodity. His analysis of sleeping patterns associated with net use echo the findings of this study in relation to mothers sleeping under the net with the youngest child, yet Kone [27] concludes that it was mostly men, rather than women or children, who use nets. This contrasts with statements made by our participants in both Madarounfa and Kollo, who claimed men regularly slept unprotected.

Kone [27] also investigated the presentation of diarrhoea, and identified four main causes: teething; inappropriate or overly varied food stuffs; dirt (lack of cleanliness); and other diseases. As in our study, Kone found that respondents rarely made a link between hygiene and sanitation and diarrhoea. Diarrhoea was 'normally' treated with plant medicine or home-made ORS, and with medication bought from an informal vendor. In Kone's study, children were likely to be presented at a health facility only if symptoms persisted or grew more severe. However, in a study of care-seeking for diarrhoea in Maradi, Page et al [29] concluded that 70% of cases reported seeking care at a health facility during a recent episode of diarrhoea, and among severe cases, 84% sought care. Proportions of consultations were consistently high in all districts studied. They found no association between consultation at a health facility and the level of education of the primary carer. Rather, consultations were associated with the increasing number of children under five in a household, and with the age of the child, with a higher proportion of consultations for children aged 6-18 months. The main reasons Page et al [29] identified for non-consultation were spontaneous recovery and self-medication, mostly from informal vendors. Interestingly, financial barriers preventing access to healthcare for diarrhoea were only cited by 10% of their respondents.

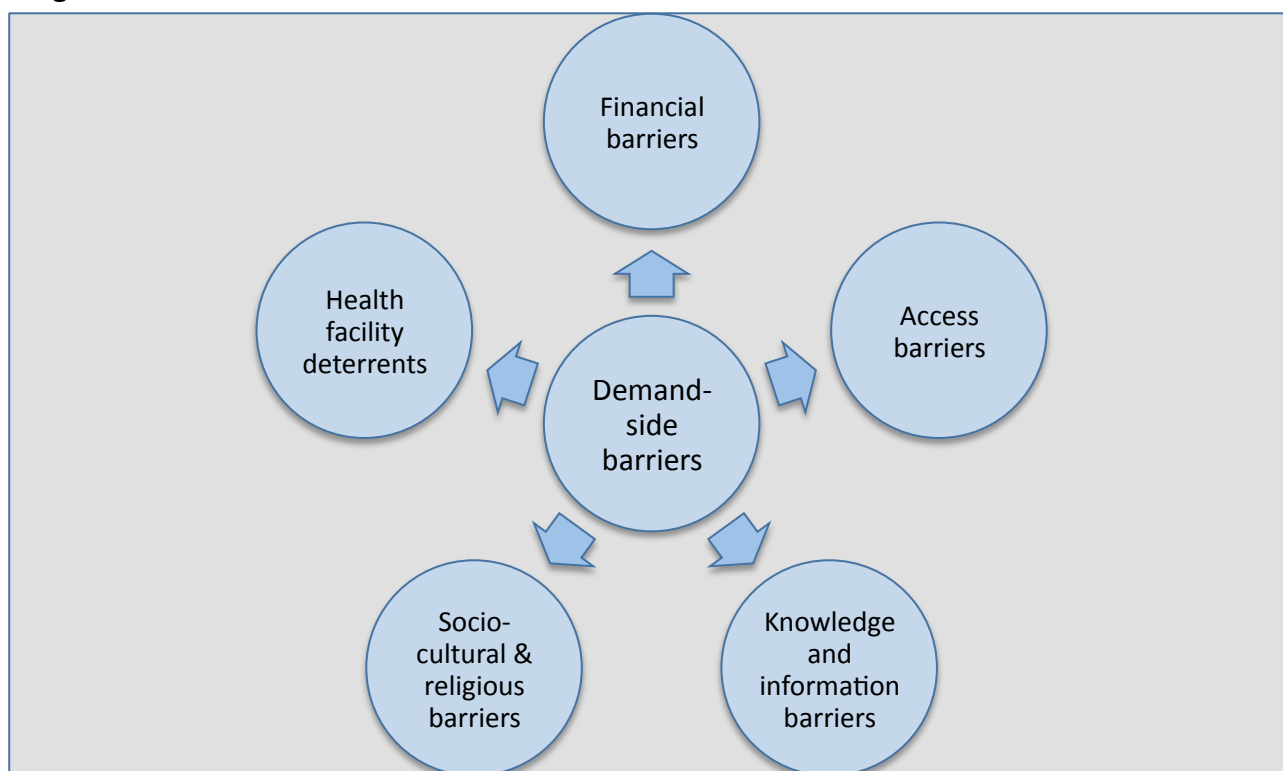
No study focusing on pneumonia in Niger could be identified. However, the need to raise awareness of pneumonia and dedicate more resources to tackle this 'forgotten killer' [30], particularly in relation to decreasing under-five mortality rates, is emphasised by the Global Action Plan for Prevention and Control of Pneumonia [31].

Barriers to care-seeking for childhood illness were addressed more generally in the literature. Bara [28] identified a number of constraints relating to the uptake of health and nutrition interventions for women and children in Maradi, Differ and Zinder including: poverty; the heavy

workload of women; lack of information; and a high cost-to-benefit ratio of healthcare. These were similar to barriers identified by Souley [32] in Mayahi, Maradi. Bara [28] also concluded that the decision to seek healthcare was, in the majority of cases, the responsibility of the male household head, as reflected in this study.

In their systematic review of qualitative evidence from Sub-Saharan Africa on household recognition and response to child malaria, pneumonia and diarrhoea, Colvin et al [4] identified five main themes: how households understand these illnesses; how social relationships in families and communities affect the recognition and response to these illnesses; how households act to prevent and treat these illnesses; how households perceive, experience and access different forms of healing; and pathways of care and decision making. These issues cut across the current study, but the synthesis of material echoes the 'guide to demand-side barriers' developed by UNICEF, that outlines four barriers: financial; distance and location of health facilities; socio-cultural and gender dynamics; education and information [5,33].

Diagram 4 – Framework of demand-side barriers



The current research developed a demand-side barriers framework that added a fifth barrier, as depicted above. The fifth barrier, health centre deterrents, collated the qualitative data on participants' perspectives of supply-side issues that influence their care-seeking and highlights the complex relationship between different determinants of a health system.

Demand for services plus provision of services does not necessarily equate with uptake of services. A critical component that has often been lacking in health interventions is a clear understanding of care-seeking behaviour. This study therefore used a participatory approach not only to assess demand-side issues (both barriers and drivers to care-seeking) from the perspective of the intended beneficiaries, but also to identify a series of related solutions, grounded in empirical data and developed at the community level to encourage and enable care-seeking for childhood illness.

As a platform upon which to develop and promote interventions that are equitable, relevant, appropriate and acceptable, UNICEF should seek to incorporate this information into ongoing policy and programming at international, national and local levels (see summary table below). One area of particular relevance is the ongoing development of iCCM and IMCI, policies that underpin Niger's strategy to decrease under-five mortality [34]. As outlined in the introduction, three high impact interventions have been introduced: increasing the provision of services; increasing financial access to services; and improving geographic access to services. Using data from the *Système National d'Information Sanitaire* (SNIS), Amouzou et al [12] demonstrate steady increases in the utilisation of health services in the decade to 2009, with steeper increases from 2006 onwards when user fees for pregnant women and children were abolished. In terms of specific conditions, Amouzou et al [12] are also able to show that, over the same period, care-seeking for childhood fever or malaria, diarrhoea and pneumonia followed persistent upwards trends, consistent with the programmatic developments. This is encouraging and provides momentum for continuing and new interventions.

A key factor is to further support and develop the network of *relais*. In highlighting the positive role of *relais* and the elevated knowledge displayed by women with whom they interact, the current research contributes evidence to support the development and expansion of this cadre of community volunteer. Other studies similarly emphasise the benefits of *relais* and as Souley et al [35,36] conclude with reference to Zinder, community members give a positive overall assessment of volunteers. The process of selecting *relais* was different in each village visited by the research team in Madarounfa. Some were chosen unilaterally by the village chief, others were nominated by their communities, and a number were identified by other NGOs (such as the French Red Cross [32]). UNICEF did not select individuals to be *relais*, rather the organisation supported the community to select its own representative. Such active participation is crucial, yet it was felt that UNICEF could advocate more strongly that individuals fulfilling the appropriate profile be nominated. This may help to avoid the appointment of candidates, such as the older TBAs the research team encountered, who may not be suitable, engaged or physically able to undertake the role. TBAs command important status within village life, and we suggest that a younger *relais* be paired with a TBA thereby supporting skill transfer and a level of continuity after training. The role of the *relais* could be developed to include case detection, tracing and follow up, and the identification and monitoring of vulnerable families (e.g. creating a list of the most vulnerable households in the catchment area) in order to target more intense support and promote utilisation of services and KFP. It is also imperative that *relais* receive frequent refresher training, high quality supervision and sustained support to perform their duties to a high standard.

Relais engaged by the community, for the community, have the potential not only to deliver but to reinforce health messages and effect change in daily behaviour, ensuring that knowledge is practically implemented and disease prevention methods are strengthened. They therefore have an important role to play in ongoing C4D strategies. In the implementation of Key Family Practices (KFP) in Maradi and Zinder, UNICEF developed an integrated communications plan incorporating four main strands: interpersonal and participatory communication for behaviour and social change (at individual, household and community levels); social mobilisation (engaging civil society to support community-led initiatives); partnerships (working collaboratively with other organisations to scale communication activities and promote the KFP model); and advocacy (supporting the Ministry of Communication to review the National Policy for Communication for Development to include stronger C4D components and make the promotion of KFPs a priority) [37,38,39]. C4D has been effectively deployed in Niger and has established a significant platform. To build on this, findings from this study highlight particular issues that need to be addressed by ongoing

strategies. The impact of C4D messages must be evaluated and refined so that knowledge regarding causation of illnesses (particularly diarrhoea and pneumonia) and recognition of symptoms and danger signs is improved. Timely care-seeking and, in particular, adherence to treatment protocols require further emphasis.

A final area to which findings from this study may contribute is social protection. Since 2010, UNICEF and partners have been accelerating efforts to ensure equitable access to basic social services in Niger. Strategies include: supporting the implementation of free healthcare at the point of service delivery for pregnant women and children under five; developing social safety nets (special measures targeting women and children in the context of emergencies) and a community-based approach; and using evidence-based advocacy to promote a comprehensive social protection approach. The National Social Protection Policy [40] was adopted in 2011. Already pilot community-based interventions have proved successful at the local level and are due to be scaled up, and special interventions targeting women and children in the context of emergencies, such as the cash transfer operations, have been recognised as an efficient new tool to protect vulnerable groups [41]. Inter-sectoral approaches have proved particularly efficient. For example, the National Social Safety Net programme with a cash transfer component was adopted by the government with the support of UNICEF and the World Bank as a initial step towards implementing the Social Protection Policy. The specificity of this programme in terms of promoting equity, is its adoption of KFP as a 'soft conditionality' for households to receive cash transfers, thereby maximising opportunities to improve child survival indicators in the most vulnerable areas of the country. In addition, other social protection mechanisms (such as defraying indirect costs like transport and prescriptions during stockouts) should be considered as a means to address social and economic vulnerabilities that prevent individuals and households from accessing health services [42].

As emphasised by the recommendations made by the UN Commission on Life-Saving Commodities (particularly recommendation 6 – supply and awareness; 7 – demand and utilisation; and 8 – reaching women and children), demand- and supply-sides of health interventions are interrelated and, to some extent, mutually dependent. Stockouts are a major supply-side issue that have negative and far-reaching ramifications on care-seeking behaviour. Managing resources to ensure a reliable supply of drugs to health facilities could have significant impact on patient attendance, compliance and positive engagement with health services. If medication was available at government health facilities, and was supplied free of charge at the point of delivery to children under five years (in line with national policy), then the financial barrier all carers discussed would be reduced.

In line with its key objectives, this research has successfully generated new empirical data and identified barriers and local solutions to care-seeking and treatment uptake of childhood malaria, diarrhoea and pneumonia in Niger. UNICEF must now strive to put this evidence into policy, and policy into practice.

Table 2 – Summary of policy/programmatic implications and action points

	Policy/programmatic implications and action points
C4D	• Develop key messages that better address the causation, symptoms and prevention strategies regarding childhood illness (particularly pneumonia and diarrhoea) and incorporate related issues such as water, hygiene and sanitation. • Strengthen demand generation through targeted C4D that emphasises the recognition of danger signs, advocate timely care-seeking, and promote adherence to treatment protocols, including the effectiveness of different treatment regimes (e.g. pills as well as injections). • Target specific groups, e.g. health education activities for fathers and household heads. • Use communication strategies in conjunction with improving access to quality health services (see below) to discourage use of plant medicine and other local treatments. • Include traditional and spiritual healers, and informal vendors in education and communication and devise strategy to encourage a shift in demand from these providers to health facilities. • Integrate rigorous monitoring and evaluation to assess the effectiveness and impact of all health education, communication strategies and demand-generating activities.
Financial and social protection	• Advocate and support the government to implement and publicise the national policy of free treatment to children under five years at the point of service delivery. • Consider targeted cash transfers or other incentives for caregivers to defray indirect costs (e.g. transport, cost of prescriptions when there are stockouts at health posts). • Advocate and support the economic and social empowerment of women, access the scalability of initiatives including micro-credit for small business. • Support a range of social policy and protection solutions that are equitable and inter-sectoral (e.g. the Safety Net programme).
Health posts	• Support the targeted expansion of the number of health posts to increase coverage for communities currently without access to services (estimated to be 15% of the population). • Revise the policy regulating hours of operation to provide 24/7 access to essential services at health posts, advocate that communities provide accommodation close to the health post for health workers. • Expand the number of health workers per health post to ensure capacity to provide static services and regularly scheduled outreach to satellite communities that do not have a health post (NB <i>relais</i> can only engage in preventative outreach). • Provide health workers with bicycles or other means of transport to conduct outreach. • Build capacity to ensure regular and high quality supervision of health post staff by staff from health centres and district facilities.

Relais	• Expand the number of trained <i>relais</i> to maximise coverage and enforce the policy regulating the number of community health workers per population. • Recruit and train male <i>relais</i> to improve engagement of male community members. • Expand the role of the <i>relais</i> to include case detection, tracing and follow up, and the identification and monitoring of vulnerable families. Encourage <i>relais</i> to schedule regular home visits for one-to-one support and counselling of care-givers. • Provide regular refresher training, high quality supervision and sustained support.
Supply side	• Strengthen supply side chain management at all levels to prevent stockouts of essential commodities. Revise protocols for maintaining standard minimum stock levels for essential commodities. • Strengthen the monitoring of stockouts through routine HMIS. Ensure health post and health centre data is disaggregated to allow for identification of bottlenecks for each type of facility separately. • Complement routine HMIS data on stockouts with regularly scheduled (e.g. quarterly) supervision visits and annual rapid assessments. • Expand the minimum package of interventions offered at health posts to include a broader range of maternal, newborn and child services.
Other	• Encourage communities beyond 'x' kilometres from a health post to develop a mechanism for transporting caregivers (e.g. by village bicycle or oxcart). • Increase the number of LLITNs distributed per household (through campaigns and other mechanisms such as ANC) to encourage universal coverage.



Conclusion

The demand-side of health interventions to improve child survival has often been neglected in research, policy and programming, or at least, has not been afforded the weight it deserves. As the Nigerien government and its partners strive to improve equitable coverage of interventions that are known to improve child survival, attention must be given to understanding demand-side (and supply-side barriers) encountered by care-givers as well as to locally derived and relevant solutions.

This research was conducted under the auspices of the UN Commission on Life-Saving Commodities for Women and Children, which recognises the importance of barriers in affecting the availability, accessibility and rational utilisation of selected commodities for maternal and child health. It is UNICEF's intention that the UN Commission use the information generated through this research to recommend innovative strategies that raise awareness of, and strengthen demand for, these lifesaving products amongst end users.

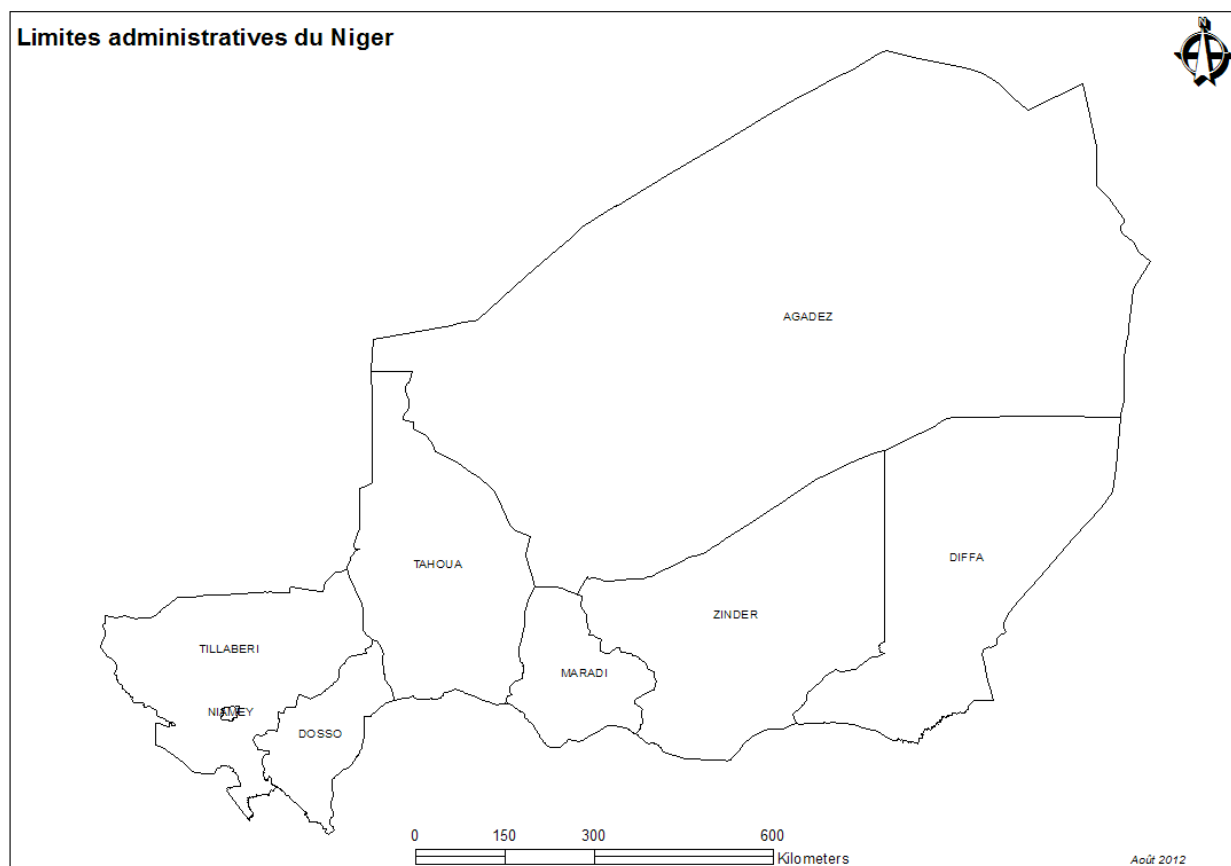
Against this backdrop and in line with UNICEF's mission to achieve equity for and realise the rights of the world's most marginalised children, the research resulted in a number of key implications for policy and programming in Niger. Building upon these specific points, five general recommendations are offered in conclusion:

1. Utilise the solutions identified as a platform to develop effective and sustainable interventions that are rooted in the lived experience of the intended beneficiaries.
2. Ensure interventions are oriented towards the community. Support caregivers to make decisions and seek treatment within their local context, rather than characterise a lack of engagement with health facilities as a product of poor health literacy. Accept that home management is likely to remain the frontline of care. Promote safe and appropriate practices at a community level and simple processes for seeking treatment at health facilities.
3. Synergise supply- and demand-side initiatives so that health is not adversely affected. Whilst demand-side generation will 'backfire' if patients expend time, energy and resources seeking care only to be denied because of stock-outs or staff shortages, demand-side generation takes time to evolve and take effect, and should therefore be implemented in parallel to supply-side challenges being resolved.
4. It is imperative that health interventions are critically and rigorously monitored and evaluated. This will promote accountability and transparency as findings are meaningfully incorporated into the cycle of programme and policy development and implementation.
5. Focused research that can be operationalised should continue to seek answers to specific questions. For example, how can interventions leading to a reduction in under-five mortality be implemented to reduce maternal and neo-natal mortality rates?

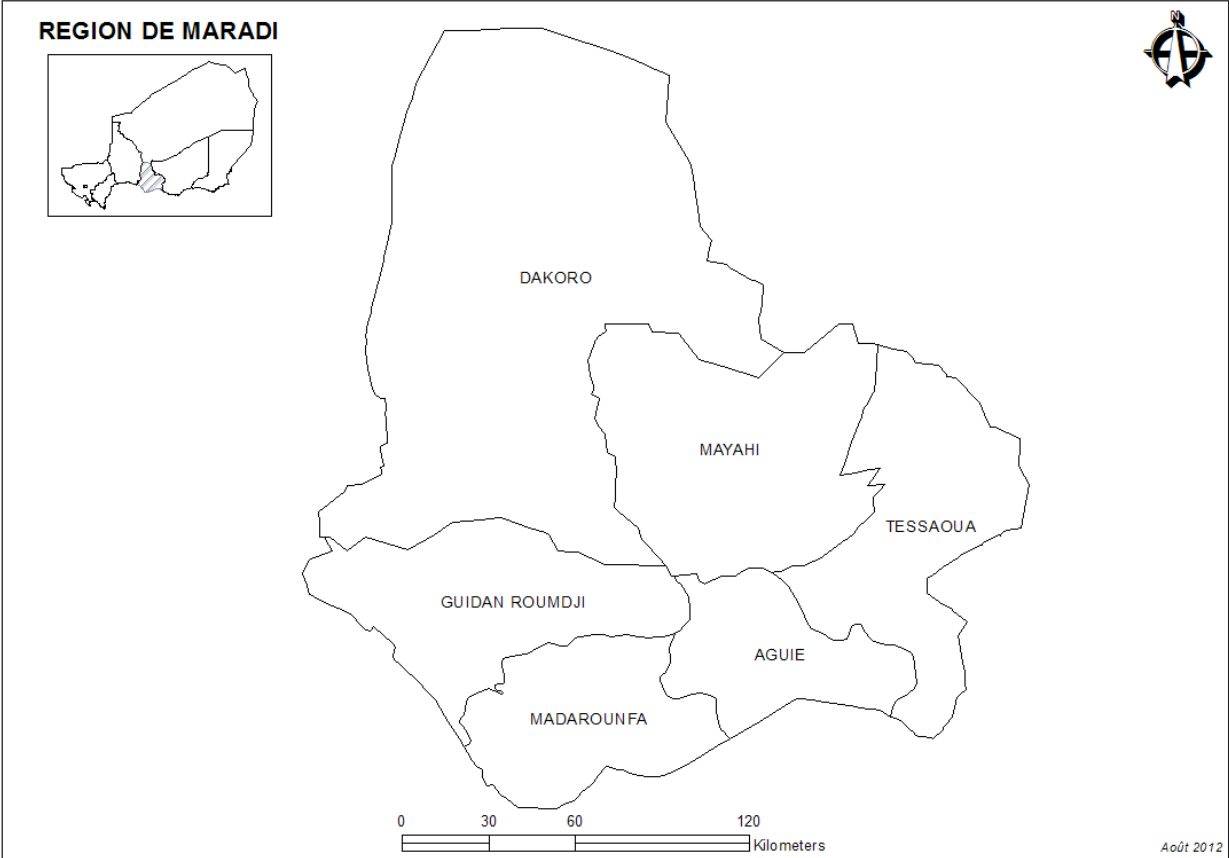
This research has shown that communities in Niger value medical services and if they can access facilities and lifesaving commodities, then they are likely to utilise them. Such positive engagement suggests that if Niger and its partners can combine resources and expertise, they can make a significant and positive impact on the health and survival of the most disadvantaged women and children, and Niger can continue to accelerate progress towards achieving its Millennium Development Goals.

Appendix 1 – Map of fieldsites

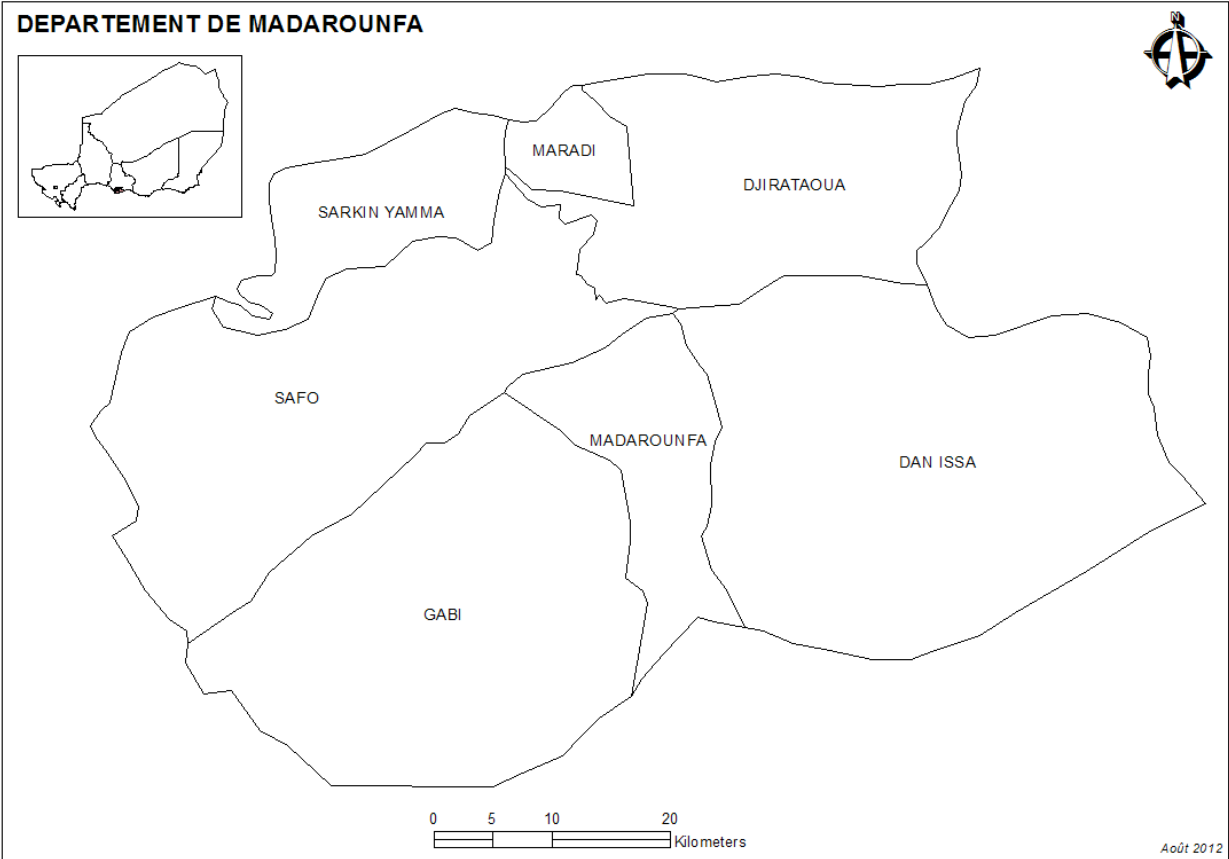
Niger



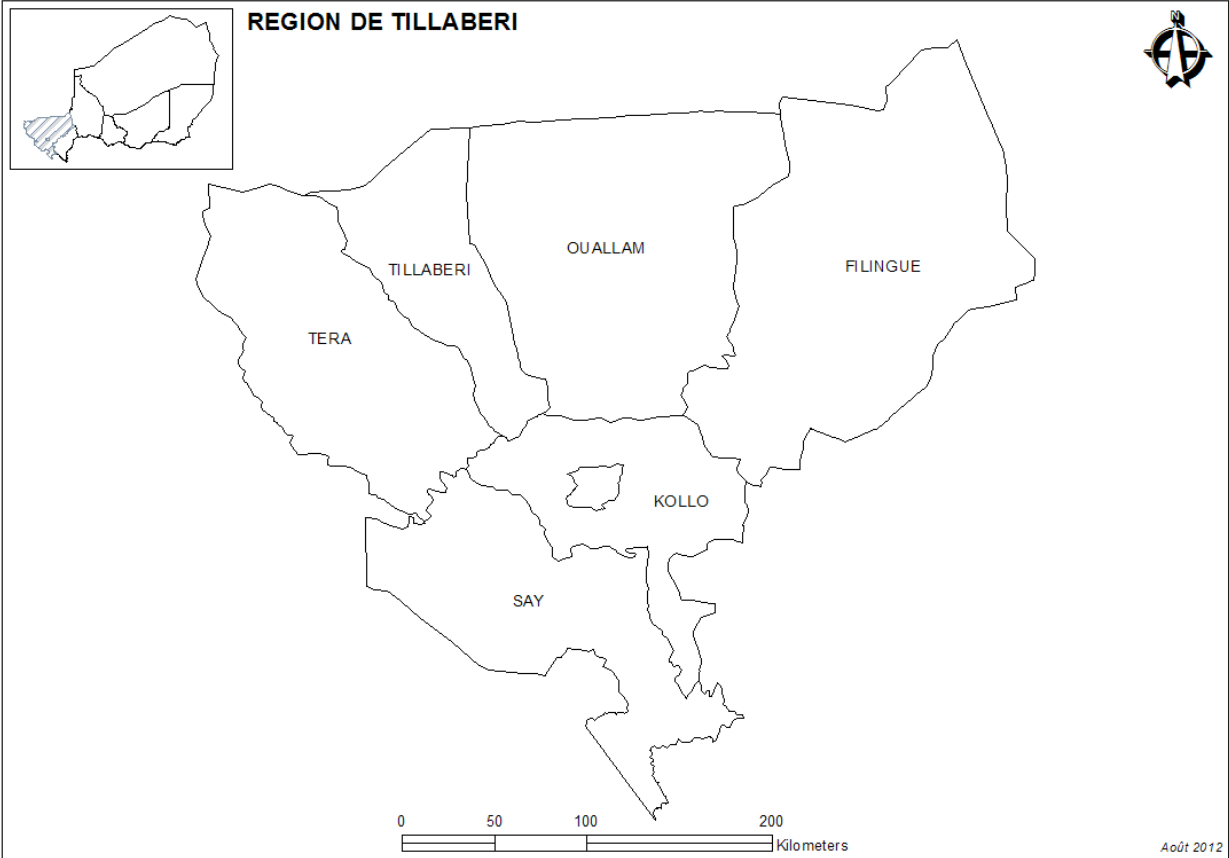
Region of Maradi



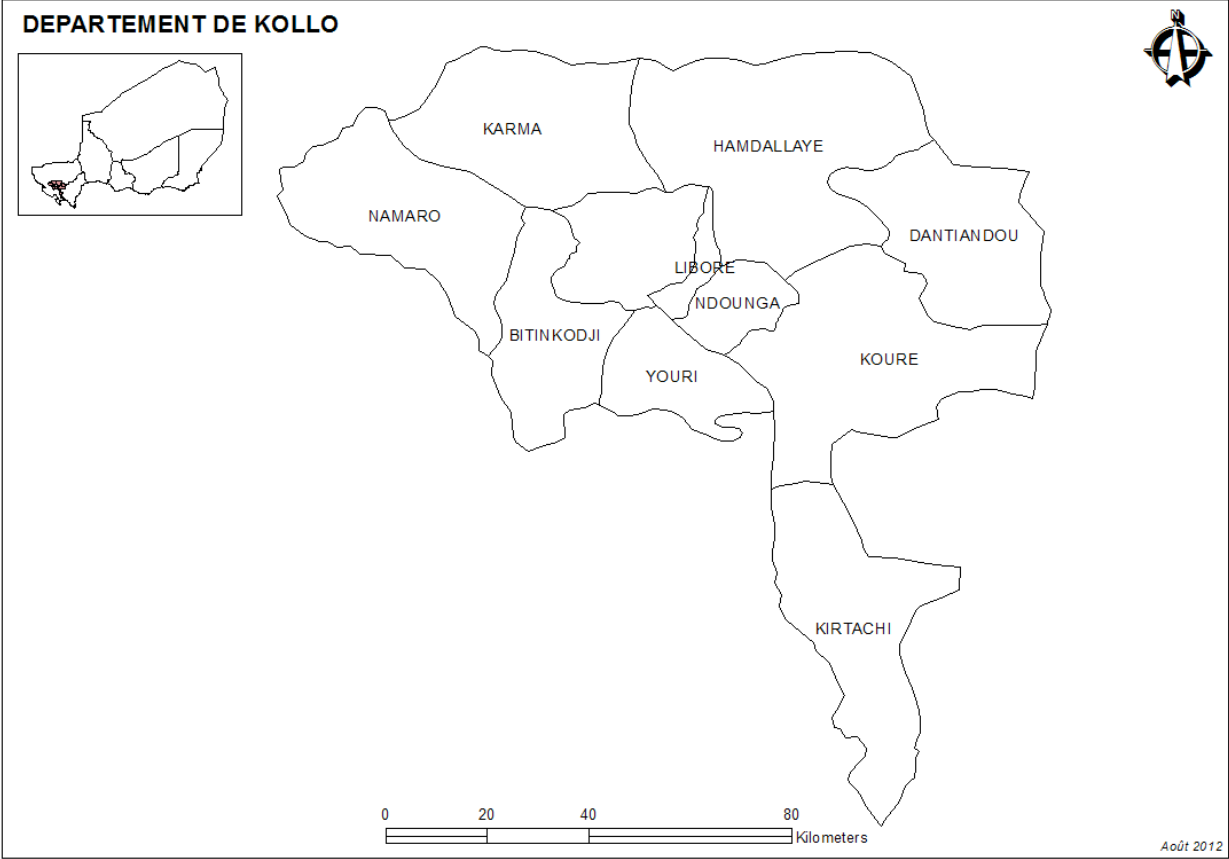
District of Madarounfa



Region of Tillabéri



District of Kollo



Appendix 2 – Methodological tools

Topic Guide

- **Malaria, pneumonia and diarrhoea**

Language

Local theories of causation

Recognition of illness

Preventive measures, disease prevention strategies

Risk /danger

- **Care- and treatment-seeking behaviour for diarrhoea, malaria and pneumonia**

Response to illness

Previous experiences

Treatment strategies, treatments sought (including gender)

- **Modes of healthcare**

Biomedical / local / traditional

Relations with healthcare providers

Non-medical impact of seeking different modes of healthcare

- **Location of healthcare**

Distance

Time

Terrain

Transport

Access (independent and collective)

- **Household and community**

Socio-cultural norms

Household (priorities and negotiation)

Social relationships, decision-making continuum and agency to act (including gender)

Role of religious and spiritual beliefs

- **Financial**

Costs (direct and indirect)

Commodification of care

- **Level of (biomedical) knowledge**

Health education exposure

Information about services available

- **Other determinants**

- **Behaviour and change**

Divergence between theory and practice (e.g. know what should do, but doesn't – why?)

Triggers and processes of change in health beliefs and practices

- **Local solutions**

Interview framework – carers of children under 5 years old

Demographic details

- Age
- Relationship to child
- Marital status
- Number of children in care
- Age of children
- Gender of children
- Do children go to school
- Did carer go to school
- Does family (paternal, maternal) live near
- Religion
- Employment
- General income range

Q1

What are the main child health problems in your community?

Do many young children (under 5) die in this area?

What do they die from?

Is there a difference in the number of children who die now compared with previous years? If so, why is this?

Q2

What do you call malaria in your community?

What causes malaria and what are the symptoms?

How do you prevent malaria and do you do this?

Do your family sleep under bed nets?

Where did you get your family's bed net(s) from? Were they treated? How much did they cost?

Do bed nets have any other uses?

If the children sleep under a bed net, when and how do they get malaria? What can be done?

What do you call diarrhoea in your community?

What causes diarrhoea and what are the symptoms?

How do you prevent diarrhoea and do you do this?

Where does your family get water from? Do you drink it directly from the source?

Where does your family (adults and children) go to the toilet? (If in the bush, do you leave it?)

Does your family (adults and children) wash their hands? With water only?

What do you call pneumonia in your community?

What causes pneumonia what are the symptoms?

How do you prevent pneumonia and do you do this?

Q3

For child illness, do you use traditional medicine / home remedies?

What for? How do you prepare? Where do you get the herbs? Who should you know how to use them?

Does your family use a traditional doctor / herbalist / spiritual healer for child illness?

What for? Do you have to pay? How much?

Do you sometimes go to the health centre for child illness?

Who takes the child to the health centre?

How far is the health centre from your place? How do you get there?

What cost is incurred to visit the health centre and obtain medicine?

What is your opinion about the quality of the services provided by the health centre?
Do you have to wait to be seen at the health centre?

Do you sometimes use the chemist for child illness? Who buys medicine from the chemist?
Why do you use the chemist (instead of the health centre?)
How far is the chemist from your place? How do you get there?
What cost is incurred to visit the chemist and obtain medicine?

Q4

When a child is ill, who do you tell?
What kind of help does your husband / family provide to you when a child is ill?
Who takes the decision to treat the child?

Q5

What cultural beliefs influence child illness and treatment-seeking in your community?

Q6

How often is your child ill?
How often do you get treatment for your child?
When did you last visit the health centre because of child illness? (Elicit narrative)

Q7

Of the three illnesses, which is the most dangerous / serious for children in your opinion?
Of the three illnesses, which are you most likely to visit a health centre for?

Q8

Where do you get your information about child illness?
What child survival information, education and communication activities are targeted at mothers?
What measures should be taken to improve the community's knowledge about child illness?

Q9

What are the main challenges your family faces in going to the health centre or accessing treatment for child illness?
What are the reasons that some families do not take their child for treatment if they are ill?
Does the cost of accessing treatment sometimes prevent you taking the child?

Q10

What are the solutions to these challenges / barriers?

Q11

What can be done to improve the health of children in this area?

Focus group discussion framework – fathers of children under 5 years old

Q1

What are the main child health problems in your community?

Do many young children (under 5) die in this area?

What do they die from?

Is there a difference in the number of children who die now compared with previous years? If so, why is this?

Q2

What causes malaria and what are the symptoms?

How do you prevent malaria and do you do this?

If they children sleep under a bed net, when and how do they get malaria? What can be done?

What causes diarrhoea and what are the symptoms?

How do you prevent diarrhoea and do you do this?

What causes pneumonia what are the symptoms?

How do you prevent pneumonia and do you do this?

Q3

For child illness, does your wife use traditional medicine / home remedies? What for?

Does your family use a traditional doctor / herbalist / spiritual healer for child illness?

Do you sometimes go to the health centre for child illness?

How far is the health centre from your place?

What is your opinion about the quality of the services provided by the health centre?

Do you sometimes use the chemist for child illness?

Why do you use the chemist (instead of the health centre?)

Q4

What kind of help do you provide to your wife when a child is ill?

Who takes the child for treatment, you or your wife?

Q5

What cultural beliefs influence child illness and treatment-seeking in your community?

Q6

What role should fathers play to prevent children getting malaria, diarrhoea and pneumonia?

What role should fathers play to ensure children access treatment quickly & easily?

What role should fathers play to create awareness about childhood illness?

Where do you get information about child illness?

Do you get any information from the imams/mosque or pastor/church?

Are there any child survival information, education and communication activities targeted at men?

What measures should be taken to improve fathers' knowledge about child illness?

Q7

What are the main challenges your family faces in going to the health centre or accessing treatment for child illness?

What are the reasons that some families do not take their child for treatment if they are ill?

Are there problems with different types of healthcare?

Does the cost of accessing treatment sometimes prevent you taking the child?

Q8

What are the solutions to these challenges / barriers?

Q9

What can be done to improve the health of children in this area?

Focus group discussion – health workers

Q1

What are the main child health problems in your community?

Do many young children (under 5) die in this area?

What do they die from?

Has there a difference in the number of children who die now compared with previous years? If so, why is this?

Q2

What causes malaria and what are the symptoms?

How do you prevent malaria and do you do this?

If they children sleep under a bed net, when and how do they get malaria? What can be done?

What causes diarrhoea and what are the symptoms?

How do you prevent diarrhoea and do you do this?

What causes pneumonia what are the symptoms?

How do you prevent pneumonia and do you do this?

Q3

For child illness, do some families use traditional medicine / home remedies? What for?

Do some families use a traditional doctor / spiritual healer for child illness?

Do some families go to the health centre for child illness?

What is your opinion about the quality of the services provided by the health centre?

Do some families use the chemist for your child illness?

Why do they use the chemist (instead of the health centre?)

Q4

What kind of help do husbands / family provide to mothers when a child is ill?

Is it the mother or the father of the child who take it for treatment?

Q5

What cultural beliefs influence child illness and treatment-seeking in this community?

Q6

Where do the community learn about child illness?

What child survival information, education and communication activities are targeted at mothers/fathers?

Is information provided through the mosques / churches?

What measures should be taken to improve the community's knowledge about child illness?

Q7

What activities do VCMs / health workers undertake in the community?

What challenges do VCMs / health workers face doing their work in the community?

Do you get support from the health centre, the government, the community?

Q8

What are the main challenges families in this community face in going to the health centre or accessing treatment for child illness?

What are the reasons that some families do not take their child for treatment if they are ill?

Does the cost of accessing treatment sometimes prevent some families from taking the child?

Q9

What are the solutions to these challenges / barriers?

Q10

What can be done to improve the health of children in this area?

Appendix 3 – Consent form

Maradi – English language version

UNICEF / Anthrologica

Qualitative research to identify solutions to local barriers to care-seeking and treatment for diarrhoea, malaria and pneumonia in Niger

Background to the study

Diarrhoea, malaria and pneumonia remain the three largest killers of children. Simple, inexpensive treatments are available for these conditions and in many countries, including Niger, efforts are being made to expand access by making the treatments available within communities and health facilities. Yet, too few children receive appropriate care. UNICEF and Anthrologica are interested in developing a better understanding of barriers that prevent uptake of treatment in Niger, and seek to develop specific strategies to address the barriers identified.

Objective of the study

The objective of this study is to learn from care givers in Maradi. We are interested in:

- Your perceptions and experiences of diarrhoea, malaria and pneumonia
- Your treatment-seeking behaviour for diarrhoea, malaria and pneumonia
- The barriers, difficulties and challenges you face in accessing treatment for these illnesses
- Your ideas about solutions to these challenges, ways in which the barriers can be overcome, and what would need to happen for better and more timely access to treatment for these illnesses.

Interview

For this purpose, we would like to talk to you about matters relating to diarrhoea, malaria and pneumonia in children. The informal interview will last for approximately one hour. You have the right to withdraw from the discussion at any time without reason.

We will ensure that your information, opinions and experiences are kept confidential and will only be used for the purpose of the study outlined. We will not use your name. During our conversation, we will make an audio recording for our records. It will be destroyed at the end of the study. During our discussion we will take a number of photographs of you. These will be used for the purpose of the current study and may be included in academic publications and other material for UNICEF and Anthrologica. If your photograph is published, you shall not be identified by name and the usual confidential process shall be followed.

In regard to collecting information for this study we would greatly appreciate your help and therefore seek your consent and cooperation. You may ask any questions related to the study and we will answer these questions to your satisfaction.

INFORMED CONSENT

I have been informed in detail about the purpose and nature of this study.

I have received satisfactory answers to all my questions relating to this study.

I have decided that I will participate willingly and can withdraw at any time for any reason.

I give my informed consent to participate in this study and have my photograph taken as part of the study.

Name of Participant

Signature

Date

Name of Witness

Signature

Date

As a witness of this letter, I ensure that I have the above information has been accurately conveyed to the participant. I also ensure that they have decided to participate in this study freely and willingly.

Maradi – Hausa language version

UNICEF / Anthrologica

Ingantancen bincike domin ganowar mahitar makarin lura da magance cutar zawo, massasara cizon sauro da sanyi ko majinar huhu.

Zawo, massasara cizon sauro da ciwon sanyin huhu na ci gaba da zama manyan cututukan da ke kashe yara. Akwai hanyoyin maganin warkar da wadannan cututukan masu sauki da arha, kuma cikin kasashe da yawa, har da Nijar, ana ta kokarin tanada wadannan hanyoyin ta wajen taimaka ma al'umma da gidajen likita/magani. Duk da wannan tanadi, yara kalilan ne ke samu taimakon warkarwa/magani. Kungiyar Majalisar Dinkin Duniya mai kula da harakokin yara, wadda ake kira UNICEF da kungiyar Antrologica suna son su kara ganewa kuma su binciko makari ko hanyoyin dake hana neman maganin wadannan cututuka cikin Nijar. Wadannan kungiyoyin na kuma neman wasu dubaru na musanman don magance hanyoyin dake hana neman maganin.

Makasudin bincike

Makasudin wannan bincike shine don a nemi sani daga masu kula da yara cikin Maradi. Muna sha'awar sanin:

- Ganewarku da masaniyarku akan zawo, massasara cizon sauro da majinar huhu
- Yadda kuke neman magance zawo, massasara cizon sauro da majinar huhu
- Matsaloli da kalubalen da kuke fuskanta wajen neman maganin wadannan cututuka
- Ra'ayoyinku game da mafita wadannan kalubale ko matsaloli, da hanyoyin da ake iya kawar da matsalolin da kuma abubuwan da ya kamata a yi don magance malatin da sauri kuma da inganta.

Tattaunawa

Saboda haka, muna so mu yi hira da ku akan zawo, massasara cizon sauro da majinar huhu ga yara. 'Yar hira za ta dauki kusan awa guda. Kuna da 'yancin tsaida hira a kawane lokaci ba tare da bada wani dalili ba. Za mu tabbatar da cewa mun kare bayanninku da ra'ayoyinku tamkar asirinku garemu kuma za mu yi amfani da bayanninku don yin wannan aikin binciken kawai. Ba za mu yi amfani da sunanku ba. Lokacin da muke tattaunawa da ku, za mu dauki 'yan hotunanku. Za mu yi amfani da wadannan hotunan don ilmantarwa da kuma wannan aikin binciken, kuma watakila a sa hotunan ga wasu takardun ko littatafan makaranta ko kuma wasu takardun kungoyin UNICEF da Antrologica. In an sa hotonku cikin wani littahi ko wata takarda, ba za'a sa sunayenku ba kuma za'a bi ka'idodin kare mutuncinku.

Muna muku matukar godiya da taimakonku cikin wannan aikin na neman bayani kuma muna rokon yarda da goyon bayanku. Kuna iya yin tambayoyi game da wannan binciken kuma mun ba ku cikkakar amsa da bayyani har ku gamsu.

SHAI DAR YARDA

An bani cikkaken bayani game da manufar da yadda wannan bincike zai kasancewa.

An bani cikkakun amsoshi ga tambayoyina dangane da wannan bincike.

Na dauki niyar yin wannan hira da son raina kuma ina iya tsaida hira a kowane lokaci da kowace irin hujja.

Na bada shaidar yarda ta yin hira a kuma dauki hotona don yin wannan binciken.

Sunan mai shiga/ba da amsa

Sa hannu/Sinye

Kwanan Rana

Shaidu

Sa hannu/Sinye

Kwanan Rana

A matsayin shaidun wannan wasika, na tabbata da cewa an ba mai shiga wannan hira binciken cikkaken bayani an kuma gaya mishi gaskiya. Na kuma shaida da cewa mai shiga wannan hira binciken ta/ya shiga da son rai ba dole ba.

UNICEF / Anthrologica
**Qualitative research to identify solutions to local barriers to care-seeking and treatment
for diarrhoea, malaria and pneumonia in Niger**

Background to the study

Diarrhoea, malaria and pneumonia remain the three largest killers of children. Simple, inexpensive treatments are available for these conditions and in many countries, including Niger, efforts are being made to expand access by making the treatments available within communities and health facilities. Yet, too few children receive appropriate care. UNICEF and Anthrologica are interested in developing a better understanding of barriers that prevent uptake of treatment in Niger, and seek to develop specific strategies to address the barriers identified.

Objective of the study

The objective of this study is to learn from care givers in Tillabéri. We are interested in:

- Your perceptions and experiences of diarrhoea, malaria and pneumonia
- Your treatment-seeking behaviour for diarrhoea, malaria and pneumonia
- The barriers, difficulties and challenges you face in accessing treatment for these illnesses
- Your ideas about solutions to these challenges, ways in which the barriers can be overcome, and what would need to happen for better and more timely access to treatment for these illnesses.

Interview

For this purpose, we would like to talk to you about matters relating to diarrhoea, malaria and pneumonia in children. The informal interview will last for approximately one hour. You have the right to withdraw from the discussion at any time without reason.

We will ensure that your information, opinions and experiences are kept confidential and will only be used for the purpose of the study outlined. We will not use your name. During our conversation, we will make an audio recording for our records. It will be destroyed at the end of the study. During our discussion we will take a number of photographs of you. These will be used for the purpose of the current study and may be included in academic publications and other material for UNICEF and Anthrologica. If your photograph is published, you shall not be identified by name and the usual confidential process shall be followed.

In regard to collecting information for this study we would greatly appreciate your help and therefore seek your consent and cooperation. You may ask any questions related to the study and we will answer these questions to your satisfaction.

INFORMED CONSENT

I have been informed in detail about the purpose and nature of this study.

I have received satisfactory answers to all my questions relating to this study.

I have decided that I will participate willingly and can withdraw at any time for any reason.

I give my informed consent to participate in this study and have my photograph taken as part of the study.

Name of Participant

Signature

Date

Name of Witness

Signature

Date

As a witness of this letter, I ensure that I have the above information has been accurately conveyed to the participant. I also ensure that they have decided to participate in this study freely and willingly.

UNICEF / Anthrologica

Fondo ceeci yan gunde kar, heemariize da gande doori sajawyan da safara duro kosarey bon Niger labo ra

Hay kan kandey goyo

Gunde kar, heemariize da gande doori no ta doori hinza kan go ga zankey wi gumo. Safarey fala, kan si cada no gono koyne labou bobo ra, Niger labo go i ra, I na fondayan sambu kan ga na safara dura ma fala borey se koirey ra da gaham bano fondoy ra. Koyne zankey kan ga du safarey hanna si ba. UNICEF da Anthrologica ga ba in gay ma faham dan hey kan go ga safarey dura ganji Niger labo ra, da I ga ba in gay ma fondayan sambu kan ga na dorey kan go ga zankey tabandi I ma I bonza.

Goyo maana

Iri goyo maana ga ti iri ma dondon Tillaberi zankey sajawkoyey ga. Iri ga ba iri ma du:

- Aran fahamey da aran bayra gunde kar, heemariize da gande doori bon
- Fondoy kan aran ga sambu gunde kar, heemariize da gande doori safara ceeci yan ra
- Kosarey da hay kan go gabou dorey wo safara duro ra
- Fondoy kan I ga hin ga sambu ga wa da hay kan garou, koyne hay kan ga hin ga nan I ma du dorey wo safarey hanno da watikulu.

Hayan

Wandin se, iri ga ba iri ma fakarey da aran hayey kan go kande zankey gunde kar, heemariize da gande doori. Iri fakara kulu kan iri ga te da aran si bisa laira fo. Aran gonda fondo kan ga hayanney gaayi wati kulu kan aran ba.

Ay ga ceda kan aran cenney ka aran ga ci ga goro iri gama ra koyne iri wane goyo hinney se no iri go ga I sambu. Iri si aran ma ka tarey tirey bon. Hayano watey iri ga aran cenney sambu cassette bon iri goyo se. Iri ga cassette cenney tusu da iri na goyo ban. Iri fakara watey iri da aran ga sambu fotoyan. I ga I dan goyo tirey ra da hambagar goyterey labari tirey ra da UNICEF wala Anthrologica goy foyan ra. Da I na aran fota dan tirey ra, I si bay ga aran ma dan a bon I ma si du ga faham da aran, gundo kan go iri gama ra ma goro.

Iri goyo labarey sambuyano watey a ga kano iri se aran ma iri ga da aran ma iri no fondo koyne aran ma yadda iri ga. Aran ga hin ga iri ha hay kulu kan aran man faham iri goyo bon, iri ga tu aran se.

FAHAMEY BANDA FONDO NOYAN

I na ay fahamandi ga bori hay kulu kan ti goyo mana da fonda.

Ay ma kani kan I tu ay se ay hayaney kulu kan I te goyo bon.

Ay yadda ga furo goyo tukoye ra koyne ay ga hin ga ay bon ka watikulu kan ay ba.

Ay fahama banda ay yadda ga tu goyo ra da i ma ay fota sambu sende goyo kambu fo.

Tukoye Ma

Lamba (Ceda)

Hano

Cedakoye Ma

Lamba (Ceda)

Hano

I ga ceda tira wo ra kan ay na hay kulu kan ga hima da ci tukoye se. Ay ga ceda koyne kan bora yadda ga tu iri goyo ra a bayo ra.

References

- [1] United Nations Secretary-General (2010). *Global strategy for women's and children's health: the partnership for maternal, newborn and child health*.
www.everywomaneverychild.org/images/content/files/global_strategy/full/20100914_gswch_en.pdf
- [2] Every Woman Every Child (2012). *UN Commission on life-saving commodities for women and children: commissioners' report*.
http://www.everywomaneverychild.org/images/UN_Commission_Report_September_2012_Final.pdf
- [3] Every Woman Every Child (2012). *UN Commission on life-saving commodities for women and children: implementation plan*.
http://www.everywomaneverychild.org/images/Implementation_plan_Sept_2012.pdf
- [4] Colvin, CJ. (2011). *Systematic review of qualitative evidence from Sub-Saharan Africa on household recognition and response to child malaria, pneumonia and diarrhoea*. (Unpublished).
- [5] Åhs, J. (2012). *Perceptions, management and barriers to care seeking for childhood diarrhoea, malaria and pneumonia: Uganda, Kenya, Nigeria, Ethiopia, Niger*. (Unpublished).
- [6] UNDP (2011). *Human Development Report 2011*.
http://www.undp.org/content/undp/en/home/librarypage/hdr/human_developmentreport2011.htm
- [7] Institut National de la Statistique du Niger (2010). *Projections actualisées de la population du Niger 2005 à 2050: Cahier des données démographiques 2005-2015*. Niamey: INS.
- [8] Gutiérrez-Amo, E. (2011). *Essential medicines global initiative country strategy, Niger*. (Unpublished).
- [9] Institut National de la Statistique du Niger et Marco International Inc (2007). *Enquête démographique et de santé et à indicateurs multiples du Niger 2006*. Calverton, Maryland: INS et Macro International Inc. <http://www.measuredhs.com/pubs/pdf/FR193/FR193-NI06.pdf>
- [10] UNICEF Niger Country Office (2011). *Catalytic Initiative: integrated health systems strengthening. Final report prepared for Canadian International Development Agency (CIDA)*. (Unpublished).
- [11] Countdown to 2015, Raquejo J., J. Bryce & C. Victoria (2012). *Building a future for women and children: the 2012 report*. Washington DC: WHO and UNICEF.
<http://www.countdown2015mnch.org/reports-and-articles/2012-report>
- [12] Amouzou A., Habi O., Bensaïd K. & the Niger Countdown Case Study Working Group (2012). Reduction in child mortality in Niger: a Countdown to 2015 country case study. *Lancet*, 380: 1169–78. [http://dx.doi.org/10.1016/S0140-6736\(12\)61376-2](http://dx.doi.org/10.1016/S0140-6736(12)61376-2)

-
- [13] Bensaid, K., V. Mistycki (2011). *Child survival indicators improve with equity in Niger*. UNICEF Information Bulletin, May 2011. (Unpublished).
- [14] UNICEF Niger (2012). *Developing the health post network in Niger*. (Unpublished).
- [15] Ministère de la Santé (2012). *Accélération de l'atteinte des Objectifs du Millénaire pour le Développement (OMD 4, 5 et 6) Santé. Développement d'une approche communautaire intégrée autour de la case de santé. Promotion du paquet minimum d'activités de la case de santé*. Direction Générale de la Santé: Direction de l'Organisation des Soins, Niamey, Niger.
- [16] Ministère de la Santé Publique (2012). Répartition de la population par département et par districts sanitaires selon certains groupes d'âge spécifiques en 2012. Direction des Statistiques, Niamey, Niger.
- [17] Ministère de la Santé Publique & UNICEF (2011). *Recherche Opérationnelle sur la maximalisation des interventions 'survie' dans un district sanitaire. Modèle d'une organisation des services de santé et des interventions à haut impact pour l'accélération de la réduction de la mortalité infanto-juvénile*. Ministère de la Santé Publique & UNICEF. (Unpublished).
- [18] Guest, G., K.M. MacQueen & E. Namey (2012). *Applied thematic analysis*. Thousand Oaks, CA: Sage.
- [19] Bryman, A. (2008). *Social research methods* (3rd edition). New York: Oxford University Press.
- [20] Ritchie, J. & J. Lewis (2008). *Qualitative research practice*. Thousand Oaks, CA: Sage.
- [21] Lock, M., & N. Scheper-Huges (1990). A critical-interpretative approach in medical anthropology: rituals and routines of discipline and dissent. In T.M. Johnson & C.F Sargent (Eds.) *Medical anthropology: contemporary theory and method*. Pp. 47-72. New York: Praeger.
- [22] Hahn, R.A., & M.C. Inhorn (Eds.) (2009). *Anthropology and public health: bridging differences in culture and society*. Oxford: Oxford University Press.
- [23] Nichter, M. (2008). *Global Health: why cultural perceptions, social representations and biopolitics matter*. Tucson: University of Arizona Press.
- [24] Pope, C., S. Ziebland & N. Mays (2000). Qualitative research in health care. *British Medical Journal*, 320(7227): 114-116.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1117368/pdf/114.pdf>
- [25] Mutai, J., E. Muniu, J. Sawe, J. Hassanali, P. Kibet & P. Wanzaia. (2010). Socio-cultural practices of deciduous canine tooth bud removal among Maasai children. *International Dental Journal*, 60(2): 94-98.
- [26] Bergstrom Henquinet, K. (2007). The rise of wife seclusion in rural south-central Niger. *Ethnology*, 46(1): 57-80.

-
- [27] Kone, M. (2008). *Recensement et analyse des facteurs structurels et comportementaux relatifs à l'adoption de quatre pratiques familiales essentielles dans la commune de Sarkin Yamma, département de Madarounfa: utilisation de la moustiquaire imprégnée, lavage des mains à l'eau au savon, utilisation du sel de rehydratation orale (SRO) et allaitement maternel exclusif*. UNICEF. (Unpublished).
- [28] Bara, I., M. Nounou, A.S. Tidjani Alou, A. Souley (2012). *Analyse des connaissances, attitudes, perceptions et pratiques des populations en matière de santé de la mère et de l'enfant dans les régions de Diffa, Maradi et Zinder*. Save the Children. (Unpublished).
- [29] Page, A., S. Hustache, F.J. Luquero, A. Djibo, M.L. Manzo & R.F. Grais (2011). Health care seeking behaviour for diarrhoea in children under five in rural Niger: results of a cross-sectional survey. *BMC Public Health*, 11:389 <http://www.biomedcentral.com/1471-2458/11/389>
- [30] UNICEF and WHO (2006). *Pneumonia: the forgotten killer of children*. UNICEF: New York. http://whqlibdoc.who.int/publications/2006/9280640489_eng.pdf
- [31] WHO and UNICEF (2009). *Global Action Plan for Prevention and Control of Pneumonia (GAPP)*. WHO: Geneva. http://whqlibdoc.who.int/publications/2008/9789241596336_eng.pdf
- [32] Souley, A. (2010). *Enquête relative aux aspects socioculturels et leur impact sur l'état de santé (et la nutrition) des enfants dans le département de Mayahi*. ACF International Network. (Unpublished).
- [33] UNICEF Health Section (2012). *Assessment of barriers to demand: a guide to assess barriers to key maternal, newborn and child health interventions from the perspective of beneficiaries and to involve them in identifying solutions*. (Unpublished).
- [34] UNICEF (2012). *Review of systematic challenges to the scale-up of integrated community case management: emerging lessons and recommendations from the catalytic initiative*. UNICEF: New York. http://www.unicef.org/infobycountry/files/Analysis_of_Systematic_Barriers_cover_1163.pdf
- [35] Souley, A (2011). *Connaissances, attitudes et pratiques en santé de l'enfant dans la région de Zinder*. Crois-rouge Française. (Unpublished).
- [36] Ardei, F., M.A. Amadou, I. Souley, B. Simon, J. Bournat & N. Check-Abdoula (2012). Promotion of Key Family Practices in the Tanout and Margaria departments, Zinder region, Niger. *Field Actions Science Reports*. <http://factsreports.revues.org/2041>
- [37] UNICEF (2011). *Promoting the adoption of key family practices for child survival in Niger. Final report for the government of Spain*. UNICEF. (Unpublished).
- [38] UNICEF (2012). *Enquête quantitative relative à la recherche action sur les pratiques familiales essentielles, la nutrition et les dépenses de consommation des ménages*. UNICEF. (Unpublished).
- [39] UNICEF Niger (2011). *Communities adopt essential family practices for accelerated child survival and development (ACSD)*. UNICEF. (Unpublished).

[40] Ministère de la Population, de la Promotion de la Femme et de la Protection de l'Enfant (2011). *Politique nationale de protection sociale*. Ministère de la Population, de la Promotion de la Femme et de la Protection de l'Enfant: Niamey.

<http://www.ids.ac.uk/files/dmfile/PNPS-versionAdopte.pdf>

[41] UNICEF West and Central Africa Regional Office & ICON (2011). Case study on narrowing the gaps for equity: Niger, developing safety nets for equitable access to social services. UNICEF: New York.

[42] UNICEF (2012). *UNICEF social protection strategic framework: integrating social protection systems, enhancing equity for children*. UNICEF: New York.

[http://www.unicef.org/socialprotection/framework/files/Full_Social_Protection_Strategic_Framework_low_res\(1\).pdf](http://www.unicef.org/socialprotection/framework/files/Full_Social_Protection_Strategic_Framework_low_res(1).pdf)

[All weblinks last accessed 12 October 2012]