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Social audit of governance and delivery of public services: Sialkot district 2005 -- Preventive child health

Anne Cockcroft, Khalid Omer, Ubaid Ullah Chaudhry, Aliya Farooqi, Sohail Saeed, Amar Dass, Manuel Pasucal-Salcedo, and Neil Andersson

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Social audit of governance and delivery of public services

Sialkot District 2005

Preventive child health

A Cockcroft, K Omer, UU Chaudhry, A Farooqi, S Saeed, A Dass, M Pascual-Salcedo, N Andersson

Sialkot, February 2006

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Summary

Commissioned by the National Reconstruction Bureau (NRB), the CIET social audit tracks the public views, use and experience of public services under devolved local government and provides a mechanism for including citizens' views and suggestions in planning and policy making, particularly at local level.

The first and second national social audits took place in 2001/2 and 2004/5. During the first half of 2006 findings from the second national social audit will be discussed widely with the public, civil society, service providers, planners and policy makers. The social audit programme continues until 2009, with alternating years of data collection and dissemination and use of findings.

To help involve citizens in local planning and to support evidence-based planning, CIET is implementing a district social audit in five focus districts. Work in Lasbela began in 2003, and Khairpur, Haripur, Sialkot, and Khanewal joined in late 2004. In these districts the social audit aims to help governments to plan and implement services tailored to the needs of their people. A national core group supports the social audit in the focus districts.

Methods

After discussions in all the focus districts, the NCG agreed the topic of 'public and preventive health' as the main area for the first district social audit. Working with sub technical groups in each district, we designed the instruments for the cycle, including a household questionnaire, a community profile record, an institutional review of government health facilities, an interview with lady health workers (LHWs), and a feedback focus group guide.

In each district we drew a stratified random cluster sample of communities to represent the tehsils (talukas) of the district. In Sialkot the sample comprised 16 rural and 6 urban communities across the tehsils.

Trained field teams (mainly women) collected household information in March 2005 and the feedback focus groups in July 2005.

Double data entry with validation ensured a clean dataset. We categorized household vulnerability on the

basis of roof construction, room occupancy, and occupation of the main breadwinner. Analysis produced data on key indicators across the district, weighted to reflect any uneven sample distribution, and examined the potential effects of interventions to improve outcomes.

Findings

Information base

The survey covered 2275 households (representing 17855 people). The household sample in each tehsil is shown in Table s1. Some 25% of the households were 'vulnerable' and 5% were 'very vulnerable'. Table s2 shows household features by tehsil.

Table s1. The household sample by tehsil

Tehsil	No. households	Total people
Daska	820	6508
Pasroor	518	4087
Sialkot	937	7260

Table s2. Household features by tehsil

Feature	Very vulnerable	Vulnerable	Educated Head	Male head
Daska	6	32	62	89
Pasroor	5	27	61	90
Sialkot	4	20	62	86
District Sialkot	5	25	62	88
Punjab	12	47	54	92
Pakistan	13	47	53	93

In the 2275 households we interviewed 2414 mothers or caregivers. Some 61% had any formal education. The 2414 mothers provided information about 3535 children below the age of 60 months. We also interviewed 41 LHWs covering sample communities.

Childhood diarrhoea

Among children aged less than 60 months, 26% had suffered diarrhoea during the last two weeks and 72% had suffered diarrhoea in the past 12 months. The proportion of children with diarrhoea during the last two weeks varied across the district (Figure s1).

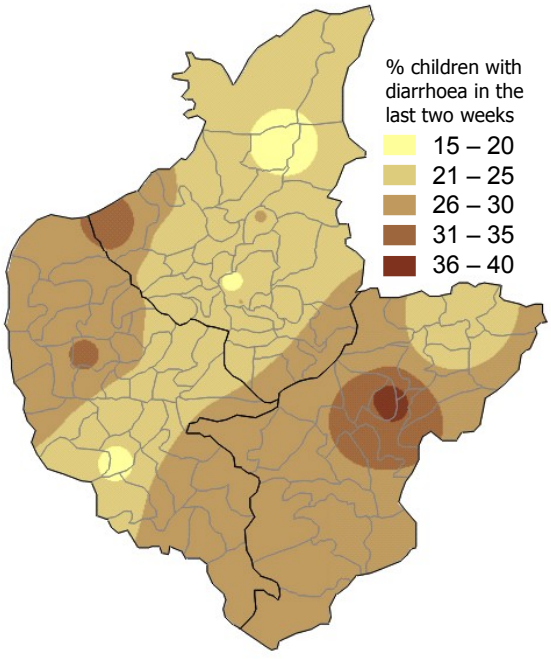


Figure s1 % children under 5 years with diarrhoea in the last two weeks

Some household features and practices are potentially related to the risk of diarrhoea in children.

Drinking water
Most (79%) households in Sialkot district rely on underground water as their main source of drinking water, some 20% on piped water and almost none use tanker/bottled or surface water. Nearly all households (96%) have a water source defined as protected.

Of the (few) drinking water containers inspected, 80% were covered, 87% were clean, 78% were raised, and 67% were covered, clean *and* raised.

Latrines and household hygiene
Some 80% of households used a latrine and 76% had some formal type of latrine (Figure s2). Most households without a latrine (91%) said this was because they could not afford one.

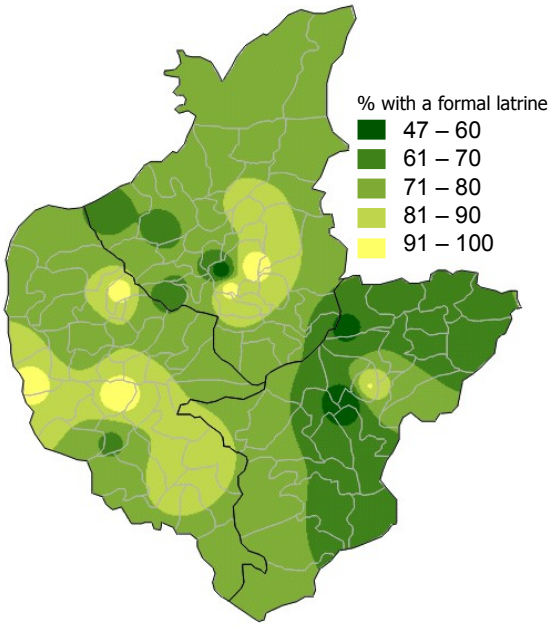


Figure s2 % households with a formal latrine

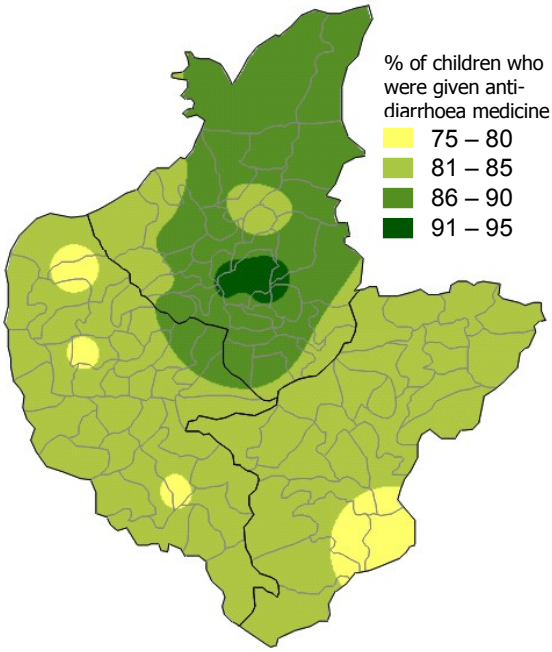


Figure s3 % children under 5 years old given anti-diarrhoea medicine during last episode of diarrhoea

Most community focus groups believed that having a latrine in the household could help prevent diarrhoea in children. They felt households would need financial and technical support to help them install latrines.

The field teams observed garbage inside or at the doorstep in 44% of households, sewage water in 37%, and excreta in 28%.

Information and knowledge about diarrhoea
Some 65% of mothers said an LHW visited their household, but few of these mothers (11%) recalled the LHW telling them about preventing diarrhoea in children. About two thirds of mothers (66%) could correctly identify a cause of childhood diarrhoea.

Analysis of risk of diarrhoea
Among younger children (0-36 months), children from households where members used a latrine had less risk of diarrhoea. If in all households people used latrines, 15 per thousand children between 0 and 36 months could be prevented from having diarrhoea. In most households people already use latrines.

Treatment of diarrhoea
Only 19% of mothers visited by an LHW recalled she told them about treating diarrhoea in children. Most (67%) mothers said they would give a child more fluids during an episode of diarrhoea and 50% said they would give the child either the same or more food. When actually treating an episode of diarrhoea, mothers gave 61% of the children more fluids and 53% either the same or more food.

In most cases (84%) the mother gave the child medicine to stop the diarrhoea (Figure s3). This is generally *not* good practice and these anti-diarrhoeal medications can be dangerous for young children.

A quarter (23%) of children with diarrhoea were not taken anywhere for treatment. Some 42% were taken to an unqualified practitioner, 29% to a private facility or practitioner, only 4% to a government facility, and 3% to an NGO service. Government facilities more often gave children ORS (55%) than private facilities (43%) or unqualified practitioners (32%).

More parents who used a private practitioner felt they were given a full explanation about the child's

condition (64%), than parents who used an unqualified practitioner (46%) or a government facility (40%). For all service providers, almost all parents were satisfied with the behaviour of the health worker.

Most parents paid for travel to private practitioners (58%), four out of ten paid for travel to government facilities and less than one quarter (21%) to unqualified practitioners. The average payments for treatment were lowest in unqualified practitioners. Four out of ten parents at a private facility, 32% at government facility and a few (9%) at unqualified practitioners had to pay for medicines or investigations outside the facility.

Childhood respiratory infections

Among children under 60 months old, 34% had suffered an acute respiratory infection (ARI) during the last two weeks and 76% during the past year (Figure s4). Some household features and practices are potentially related to the risk of ARI in children:

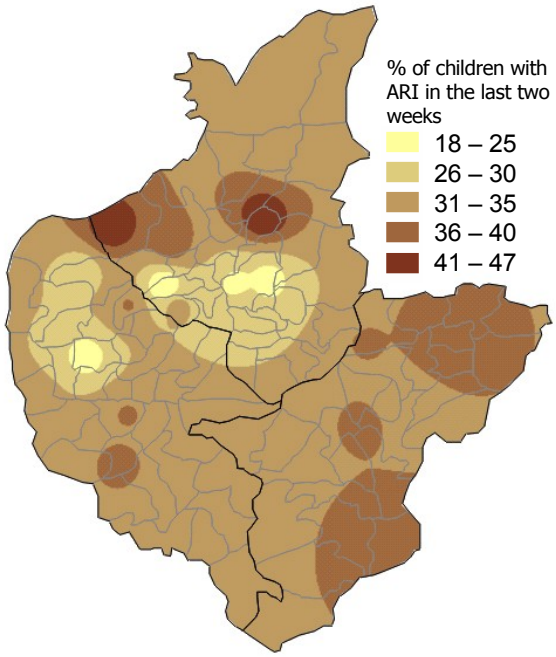


Figure s4 % children under 5 years old with ARI in the last two weeks

Cooking and heating
Some 74% of households had their cooking area separate from the main living area, and 86% had their cooking area separate from the sleeping area. Most cooking was on wood stoves and only 29% used non-smoky cooking fuels. A third of households (38%) had some type of heating system, mostly wood stoves.

Smoking and ventilation
More than half (56%) of the households had at least one member who smoked inside the household. Most (88%) households had some form of ventilation.

Analysis of risk of ARI
Most of the household features we studied were not related to the risk of ARI. But children from households where the head was educated were less likely to have had ARI. Children from urban areas and female children also had a lower reported risk of ARI.

Treatment of ARI
Of mothers visited by an LHW, very few recalled being told how to recognize (1%) or treat (5%) ARI.

Of children with ARI in the last 12 months, 14% were not taken anywhere for treatment, 48% were taken to an unqualified practitioner, 31% to a private qualified

practitioner, only 5% to a government facility, and 2% to an NGO service.

Private practitioners provided a full explanation to parents for 70% of children with ARI, government practitioners for 44%, and unqualified practitioners for 50%. All the medicines were provided in the facility for 92% of visits to unqualified practitioners, 75% to government facilities and 60% to private facilities.

Most families paid for travel to government or private facilities but not for travel to unqualified practitioners. Payments for treatment in government facilities were less than those for private or unqualified practitioners. But half of those visiting government facilities had to pay for medicines outside the facility.

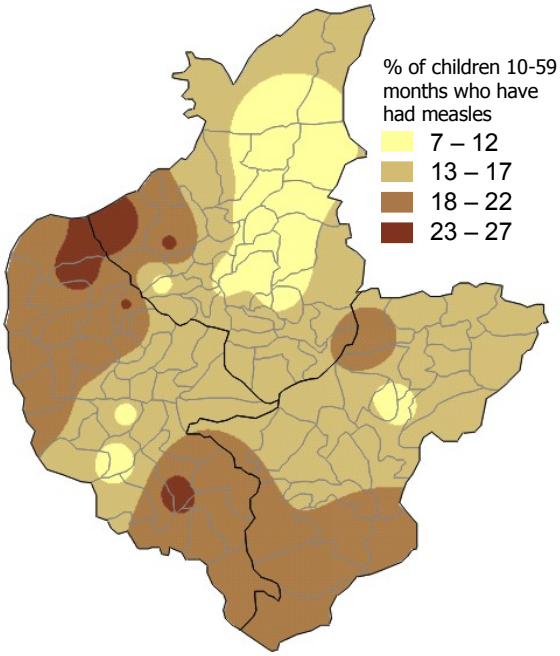


Figure s5 % children 10-59 months who have had measles

Childhood measles

Among children 10-59 months old 17% had had measles (excluding cases in children less than 10 months old) (Figure s5).

Analysis of risk of measles
Younger children were less likely to have had measles. Children who had not been immunised against measles had twice the risk of having measles of children who had been immunised. If all children were immunised, this could potentially protect an extra 11 per thousand children in Sialkot from having measles.

Costs of measles
Of those children aged 10-59 months who had measles in the last 24 months, 61% of their parents paid something for treatment. Among those who paid, the mean amount was Rs 340 (median Rs 100).

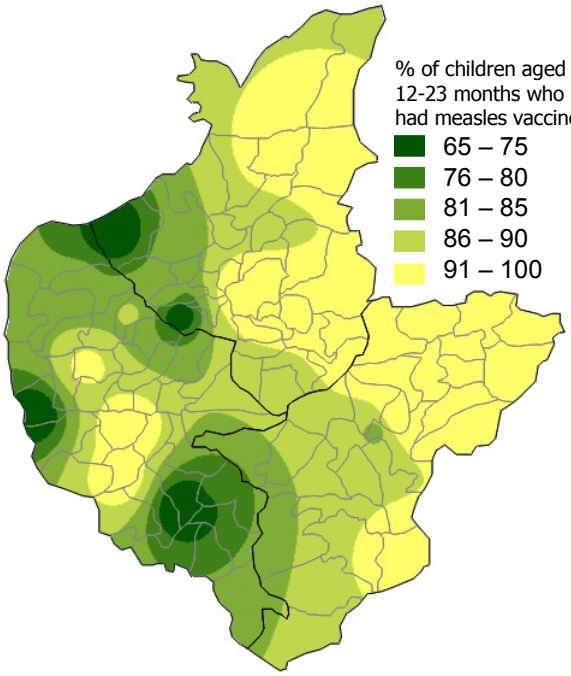


Figure s6 % children 12-23 months who had measles vaccine

Childhood immunisations

Among children aged 12-23 months, 95% had received BCG vaccine, 88% had received a full course of DPT injections, and 86% had received measles vaccine (Figure s6). All children under 60 months had received polio drops at least once during the last year, and most of them had received drops many times.

Knowledge and perceptions about immunisation
Nearly all mothers had heard something about immunisations, but sometimes no more than information about where to go to get the immunisation.

Some 88% of mothers were able to mention at least one illness preventable by immunisation. Virtually all (99%) thought it was worthwhile to immunise children. Only 3% had heard of any adverse effect of immunisation. Among mothers visited by an LHW, 24% recalled being told something about immunisations. Most (89%) of mothers had discussed immunisation in the family. For 70% of the children mothers alone had made the decision about immunisation, for 11% the mother and father decided together, and for 19% mothers were not involved in the decision.

Analysis of receiving measles vaccine
Children were more likely to be immunised if: they were older than 36 months, their mother had some education, thought immunisation was worthwhile, and did not know of bad effects of immunisation, their mother had been told by the LHW about immunisations, their family had discussed immunisations, and their community was within 5Km of a government immunisation facility.

Public satisfaction with basic services

Isolated satisfaction ratings must be interpreted with caution as they may be influenced by many factors, but they nevertheless offer a feedback to district governments about a range of services provided by district and tehsil governments.

Roads
Some 48% of households were satisfied with the roads and 99% said they had access to roads.

Public transport
Some 72% of households were satisfied with public transport and all said they had access to it.

Government garbage disposal
Only 11% of households were satisfied with garbage disposal and 28% said they had access to a service..

Government sewerage system
Some 46% of households were satisfied with garbage disposal and 99% said they had access to a service.

Government water supply
Only 17% of households were satisfied with government water supply and 27% said they had access to a supply.

Agriculture services
Some 54% of households were satisfied with agriculture services and 86% said they had access to a service.

Government education services
Some 67% of households were satisfied with education services and all said they had access to a service.

Government health services
Some 53% of households were satisfied with health services and 98% said they had access to a service.

Gas supply
Only 20% of households were satisfied with gas supply and 29% said they had access to a supply.

Electricity supply
Some 85% of households were satisfied with the electricity supply and all said they had access to a supply.

Commentary

This report presents the main findings of the social audit in Sialkot district. It will hopefully be a useful reference. The work of disseminating the findings and making use of them to support evidence-based planning is only just beginning. Over the coming months the findings will be presented and widely discussed within the district, inside and outside government.

Some findings for further discussion include:

- the high rate of childhood diarrhoea and the protective effect of household use of latrines in younger children
- the high use of anti-diarrhoea medicines in children
- the low use of government health services and high use of unqualified practitioners for treatment of both diarrhoea and ARI
- the local evidence of the protective effect of measles vaccine on the risk of measles
- the contrast between LHW reports of giving information to most mothers and few mothers recalling being given information by the LHW
- the information about public satisfaction with services and services where Sialkot is above and below the overall figures for Punjab

Introduction

Commissioned by the National Reconstruction Bureau (NRB), the CIET social audit tracks the public views, use and experience of public services under devolved local government and provides a mechanism for including citizens' views and suggestions in planning and policy making, particularly at local level.

The aims of the five year social audit programme are:

- To provide citizen's views and experience of devolution
- To examine delivery of public services to citizens and track changes over time
- To provide a means of input for citizens into district level planning
- To support evidence-based planning, especially at district level

CIET conducted the baseline national social audit in 2001/2 and the second cycle in 2004/5. The second cycle allowed an assessment of changes since the baseline at the beginning of devolution, and identified factors related to positive outcomes. During the coming months the findings of the second national social audit will be shared and discussed widely with the public, civil society, service providers, planners and policy makers. The third national social audit will begin in the second half of 2006. The social audit programme is set to continue until 2009, with alternating years of data collection and dissemination and use of the findings.

The national social audit collects information from a representative sample of some 54,000 households in communities in all districts. The social audit goes beyond information gathering, analysis, and reporting. It goes on to facilitate discussion with communities, formulation of solutions and strategies, validation with other institutions such as health and education facilities, and discussion with local government authorities.

The social audit in focus districts

In order to achieve the second two aims of the social audit (above) it is necessary to work in more detail within districts, and CIET is implementing a district social audit in five focus districts. Experience in these districts will facilitate the roll-out of district level social audit to additional districts over time. Work in the first

focus district, Lasbela, began in 2003, and four further districts – Khairpur, Haripur, Sialkot, and Khanewal – joined towards the end of 2004.

In the focus districts the social audit aims to help governments to plan and implement services tailored to the needs of their local populations. It is a means of giving form to the intention of the Local Government Order 2001 to empower citizens to participate in an informed way in decisions that affect their lives, and encourage them to engage in local democratic processes. A key element of the district social audit is the close involvement of government officers, elected representatives and civil society groups, building their skills over time institutionalising the process so that it can be sustained beyond the time of the project. In summary, the aims of the district social audit are:

- To assist evidence-based planning at district, tehsil and union levels
- To provide a means of input for citizens into district level planning
- To build capacities of district officers and elected representatives for evidence-based planning
- To produce a sustainable process (over a five year programme)

The five focus districts all joined the scheme based primarily on the interest and enthusiasm of the nazims and other members of their district governments, beginning at the time of disseminating the findings of the baseline (2001/2) social audit in regional meetings. Provincial governments, especially through the provincial departments of local government and rural development, endorsed the choice of focus districts in their respective provinces.

Operationalising the social audit in focus districts

In each of the five districts, CIET and the district government have made similar arrangements for the social audit.

An initial *district orientation meeting(s)*, attended by key stakeholders inside and outside government (at district and tehsil levels), introduced the concepts of the social audit and the objectives of the district social audit scheme, and provided an opportunity for questions and

discussion about the proposed processes in the district. Participants identified the issues they considered to be the first priorities to be covered by the district social audit, bearing in mind that the priority issue should be one where it could be possible for the district to act to change the situation. Participants also agreed to form a district social audit steering group, identified a suitable person to be the social audit focal point on behalf of the district government, agreed arrangements for providing office space for the CIET social audit district coordinator, and agreed arrangements for tehsil level orientation meetings. In Sialkot district the initial district orientation meeting took place on 10 December 2004.

A series of *tehsil orientation meetings* across the district introduced participants to the social audit and heard their priority topics for the district social audit. The office of the EDO community development facilitated these tehsil meetings. Participants included tehsil level government officers and elected representatives, as well as representatives from union councils, from civil society, and from the media.

The *district steering group* discusses policy issues and makes decisions about the social audit at district level. It coordinates support to the CIET team for social audit activities. It also gives inputs into the design of the social audit cycles. It is the forum for discussing recommended actions emerging from the social audit evidence and helping to incorporate these into district planning.

In general, the steering group comprises:

- District Nazim & Naib Nazim
- From district administration:
    - DCO
    - Finance and planning department
    - Community development department
    - Key line departments such as health, education, public health engineering, agriculture, livestock
- Representatives from the district council
- Representatives from tehsil councils and administrations
- Civil society representatives such as NGOs/CBOs/CCBs, academic institutions, media, or other professional bodies

Annex 1 gives the list of members of the social audit district steering group in Sialkot district.

Each district government nominated a *sub-technical group* to work in detail with the CIET team on selection of the household sample and design of the instruments for the social audit. The groups generally included representation from relevant line departments including finance and planning, community development, health, public health engineering, members from the district council, selected TMOs, and relevant civil society representatives. Annex 2 lists the members of the sub-technical group in Sialkot district.

The CIET district coordinator collected *basic information about the district* to facilitate sampling, mapping and communication. This included:

- A list of all important contacts within the district and all tehsils with full contact details
- Population data about district tehsil and union councils with urban and rural distribution.
- A list of union councils in each tehsil, marked as urban or rural
- A recent map of the district with tehsil and union boundaries

Focus district national core group

A national core group supports the social audit in the focus districts. The group includes representation from all the focus districts, from provincial local government departments, and from NRB, with CIET providing the logistic and secretarial support. The terms of reference for the national core group are shown in Annex 3. The national core group shares experiences of the district social audit between the focus districts, identifying what has worked especially well, so that a tool-box for district social audit in other districts can be developed.

The inaugural meeting of the group took place on 3 December 2004 in Islamabad, with a follow-up meeting on 11 June 2005 in Lasbela. In these meetings the group agreed their terms of reference, approved a memorandum of understanding between CIET and focus districts (subsequently sent to provincial governments for endorsement), agreed a common topic for the social audit in all the focus districts, received preliminary findings from the social audit and discussed plans for their dissemination.

A social audit cycle

- Clarify the strategic focus
- Design instruments, pilot test
- Collect information from households on use, perceptions and their experience of public services
- Link this with information from key informants and relevant services
- Analyse the findings in a way that points to action
- Take findings back to the communities for their views about how to improve the situation
- Bring evidence and community voice into discussions between service providers, planners and community representatives to plan and implement changes

Methods

Annex 4 gives a general description of the CIET social audit methods. The concept of the social audit is simple: collect information about a key problem from the people concerned and from service providers. Then use this information as a basis for involving the public and service providers in making changes to improve the services. The key steps include: collect information from women and men in households in representative communities about their knowledge, use, perceptions and experience of the problem and their use of relevant services; link this with information from the services and service providers; analyse the findings in a way that points to what actions might improve matters; take the findings back to the communities for their views about what could improve the situation; bring the findings and suggestions to discussions between service providers, planners and community representatives to plan and implement changes. The loop is closed when a repeat fact-finding exercise assesses the changes and their effects.

The topic for the social audit cycle

In each district, a short list of topics emerged from the consultative process in district and tehsil level meetings including government and civil society (see Introduction). Four topics came up in all the focus districts, in slightly differing orders of priority.

1. Health (including public and preventive health issues such as hygiene, sanitation and drinking water)
2. Education (with emphasis on girls' education, special and technical education)
3. Irrigation (*islahe aabpashi*)
4. Roads and communication

These district priorities were discussed in the first national core group meeting. The group agreed on "Public and preventive health" as the topic for the first cycle, noting that others on the shortlist could be topics of subsequent social audit cycles. In the case of Lasbela, some aspects of public health, water supply and sanitation had already been covered in their first social audit cycles, so they extended the focus more onto aspects of childhood immunisation.

Data collection instruments

CIET worked with district sub-technical groups to design the instruments for social audit, with an emphasis on collecting information that could be useful for planning service improvements. This exercise was also an opportunity for skills transfer to the district teams. Sharing of expertise and suggestions between districts ensured that a common set of instruments emerged with inputs from all districts, suitable for collecting information in the diverse circumstances of the five focus districts.

The social audit instruments are standards-based, drawing on CIET experience as well as other relevant sources. In this case, we used in particular the experience of the first social audit in Lasbela as a guide for relevant sections of the instruments.

The instruments for the social audit cycle included: a household questionnaire, a community profile, an institutional review of health facilities, a key informant interview for lady health workers, and a feedback focus group guide.

The household questionnaire comprised two sections:

- general household information from a household respondent, including demographics of the household, household hygiene practices and water supply, and satisfaction and perceived access to a range of public services
- information from mothers of under five years old children, concerning their education, knowledge, attitudes and practices, as well as illnesses in the children and their management, and immunisation of the children

The community profile was completed by means of discussion with a knowledgeable person in the community and observations by the field workers. It covered garbage disposal, the sewerage system, community drinking water sources, type and location of health facilities, and information about any community organizations.

The institutional review of government health facilities serving communities collected information about records and supplies, and, by observation, the presence and functioning of facilities and equipment. It included

an interview with the vaccinator or other person responsible for the facility vaccination services.

A *key informant interview* collected information from lady health workers in those sites where they worked, including their education and training, visits to the households, any problems they faced, and their relevant knowledge and practice.

Feedback focus group guides were developed once the basic findings from the households were available. They presented tehsil level key findings and invited discussion and suggestions for solutions. The guide covered the use of latrines and childhood diarrhoea, management of diarrhoea, the household environment and respiratory infection in children, and how to encourage and support parents to vaccinate children.

Sample and sampling

The CIET team and the sub-technical group in each district selected a stratified random cluster sample of communities to give representation of the situation in the different tehsils or talukas. First union councils were randomly selected from each tehsil, reflecting urban/rural spread and with the number according to the population in each tehsil. We included a minimum of four union councils per tehsil. The official list of union councils provided by the district government was used as the sampling frame for the selection of union councils. From each union council we randomly selected one community (village or mohalla) from the list of communities in the union.

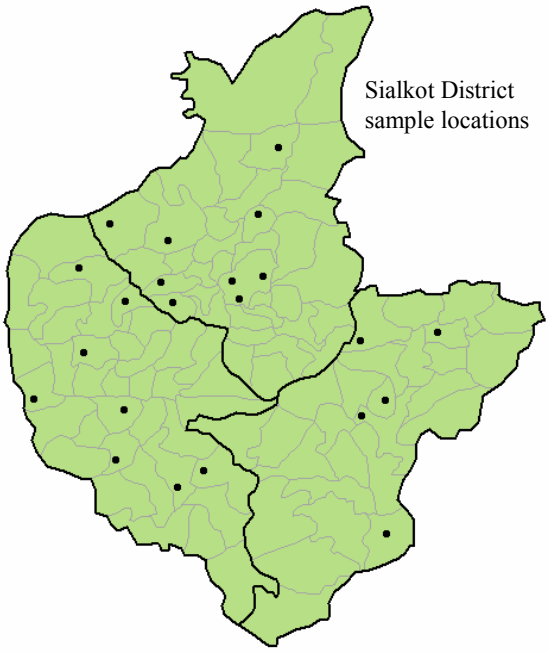


Figure 1. Sample sites for Sialkot social audit 2005 (map)

Sialkot district consists of three tehsils and has 22 union councils –6 urban and 16 rural. The sample (Figure 1) comprised the following urban and rural sites from each tehsil:

	Urban	Rural
Daska	2	6
Pasroor	1	4
Sialkot	3	6
Total	6	16

In each selected community, the sample included a group of 100 contiguous households with children under five years, spreading out from a random starting

point. There was no sampling within the site, all the households were included.

Field teams

The field teams comprised district residents, with a majority of women since the main household interviews were with women. In the different focus districts, team members included members of NGOs, senior university students, recent graduates, and councillors.

Teams for the household survey and key informant interviews attended a three-day training, including classroom sessions and field practice. Each field team comprised eight female interviewers, one female quality control associate and one male logistic control associate.

The field teams trained to conduct the community focus group discussions each comprised two men and two women. More than half of them had participated in the household data collection. Their training lasted three days, including classroom and field practice.

Data collection

The field teams undertook data collection for the 22 sites in the sample of Sialkot district in March 2005.

Generally, each team completed the household survey in one community in one day. In come cases a site could not be completed in a single day due to difficult terrain or weather conditions. The field teams took with them a letter from DCO, giving official status to the work. On entering each community, the team logistic control associate made contact with community leaders to explain the purpose of the survey and to seek their support for the field work in the community.

After preliminary analysis of the household findings, the teams returned to the same communities and conducted focus group discussions. The focus group discussions in Sialkot district took place in July 2005.

A focus group discussion

Data entry and analysis

The field supervisers checked the registers and sent them to the CIET data management unit (DMU) in Karachi. Data entry by trained operators used the public domain software package Epi Info. Double data entry with validation reduced key stroke errors.

After validation further cleaning of the dataset looked for logical errors, out of range responses and duplications. The cleaning was completed by checking back to the original data registers as necessary.

Analysis used CIETmap software. For questions that had multiple responses, we used SPSS software to generate frequencies. Analysis followed and elaborated the analysis plan outlined during the design phase, which identified key outcomes of interest in relation to preventive child health, and factors potentially related to these outcomes. Initial analysis generated frequencies of all main indicators . The values for all main indicators at district and tehsil level are shown in the tables in Annex 5.

Although the sample size in each tehsil reflected the relative population in that tehsil, this was not exact. Therefore, to take into account under- and over-sampling between tehsils, we calculated *weights* and applied these when making district level estimates. All the figures shown in this report are weighted, unless stated otherwise.

Further analysis examined the associations between outcomes and related risk and resilience factors, first in a univariate analysis and then in a multivariate model to examine the effects of relevant variables simultaneously. In this analysis, we included factors measured in instruments other than the household questionnaire, linked to the household and child data by means of linking code numbers. For example, this *meso-analysis* allowed us to examine the relationship between the distance of the nearest government health facility from the community and vaccination in children, taking into account the effects of other variables related to vaccination.

To investigate the relationship between household economic status and important outcomes, we defined a composite variable for household vulnerability, based

on household roof construction, degree of overcrowding, and occupation of the main breadwinner. If all three factors were adverse, we defined the household as very vulnerable, while if two out of three were adverse, we defined the household as vulnerable.

In analysing the reports of the focus group discussions, we identified certain themes mentioned by groups and coded the reports according to whether the theme was present or not. We entered this into the computer to allow us to compare it with household findings. We also used the reports to provide a qualitative understanding of some of the quantitative findings, including extracting quotes of people describing the situation in their own words.

Household information base

- 2275 households
- 17855 people
- 1789 boys aged less than 60 months
- 1746 girls aged less than 60 months

Table 1. The household sample by tehsil

Tehsil	No. households	Total people
Daska	820	6508
Pasroor	518	4087
Sialkot	937	7260

Table 2. Household features by tehsil

Feature	Very vulnerable	Vulnerable	Educated Head	Male head
Daska	6	32	62	89
Pasroor	5	27	61	90
Sialkot	4	20	62	86
District Sialkot	5	25	62	88
Punjab	12	47	54	92
Pakistan	13	47	53	93

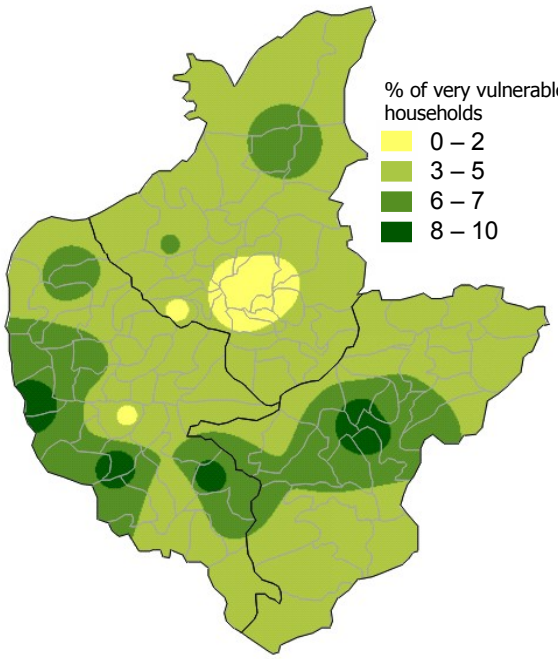


Figure 2 % of "very vulnerable" households

Table 3 Children in the survey by tehsil

Feature	Total children	Children <60 months	Children 12-23 months
Daska	1468	1303	249
Pasroor	893	791	164
Sialkot	1524	1441	290
Sialkot District	3885	3535	703

Findings

The information base

Households

The survey covered 2275 households (representing 17855 people) in 22 representative communities (Box). The number of households in the sample in each tehsil and the total population covered in the households are shown in Table 1.

Some 89% (2038/2274) of household respondents were women. Most (88%: 2000/2267) household heads were male, and 62%; (1400/2266) had any formal education.

Some 25% (582/2248) of the households were 'vulnerable' and 5% (110/2248) were 'very vulnerable'. The proportions of vulnerable and very vulnerable households were lower and the proportion of household heads with some education was higher in Sialkot than in Punjab and in Pakistan overall (Table 2). Figure 2 shows household vulnerability across the district.

Mothers/caregivers

In the 2275 households we interviewed 2414 mothers or caregivers. Most of them were the mothers of the children being inquired after (93%; 2249/2407). Some 61% (1448/2403) had some formal education.

Children

The 2414 mothers provide information about 3535 children less than 60 months old. About half (51%; 1789/3535) were male. Table 3 shows the number of children in each tehsil by age group.

Lady health workers (LHW)

We interviewed 41 LHWs. Most (26/41) of these were young women between the ages of 18 and 30, 6/41 had less than a 10th grade education while 35/41 had at least a 10th grade education. About half (22/41) had been working as an LHW for 5 years or more and only one was new to the position within the past year.

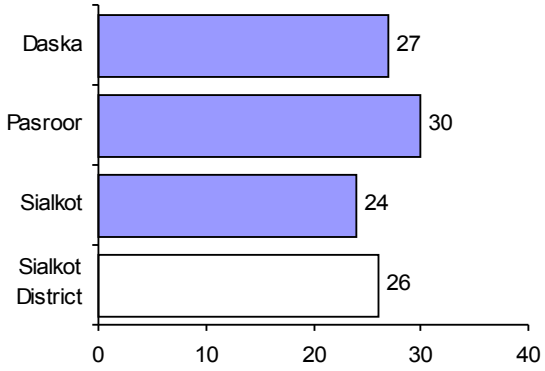


Figure 3 % of children with diarrhoea in the last 2 weeks

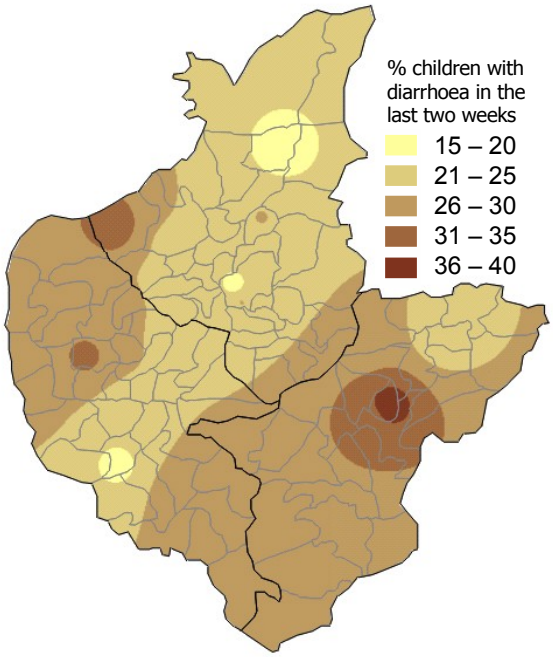


Figure 4 % children under 5 years with diarrhoea in the last two weeks

Table 4 % households using different sources of drinking water

	Piped	Ground Water	Surface Water	N
Daska	6	94	-	820
Pasroor	17	83	-	518
Sialkot	32	68	<1	934
Sialkot District	20	79	<1	2272

Table 5 % households with different conditions for drinking water containers

	Covered	Clean	Raised	Covered, clean, raised
Daska	83	91	65	57
Pasroor	91	88	85	73
Sialkot	78	86	78	67
Sialkot District	80	87	78	67

Childhood diarrhoea

Frequency of childhood diarrhoea

Among children aged less than 60 months, 26% (876/3338) had suffered diarrhoea during the last two weeks and 72% (2417/3338) had suffered diarrhoea in the past 12 months.

As shown in figure 3, the proportion of children with diarrhoea during the last two weeks was rather higher in Pasroor than in Daska and Sialkot. The map in Figure 4 shows the variation across the district in the proportion of children under 5 years old with diarrhoea in the last two weeks.

In a third (31%; 697/2226) of children who had diarrhoea in the past 12 months their last episode went on for longer than three days and 7% (160/2404) had blood in their stool during the last episode.

Variables potentially related to childhood diarrhoea

The field teams collected information about variables at household level potentially related to the risk of diarrhoea in children.

Drinking water

Most households (80%; 1829/2272) in Sialkot district rely on ground water as their main source of drinking water, some use piped water (20%; 436/2272) and very few tanker, vendor or bottled water (0.4%; 7/2272) (Table 4). As a consequence, nearly all households have a water source defined as a protected source (96%; 2183/2270).

Few households treated their water in any way (12%; 261/2264) and those that did most commonly boiled it.

Across the district 24% (492/2152) of respondents allowed interviewers to inspect the household drinking water container. In 37% (795/2152) of households there was no container, as they took water directly from the source. Among households where observation of the drinking water container was possible, some 80%

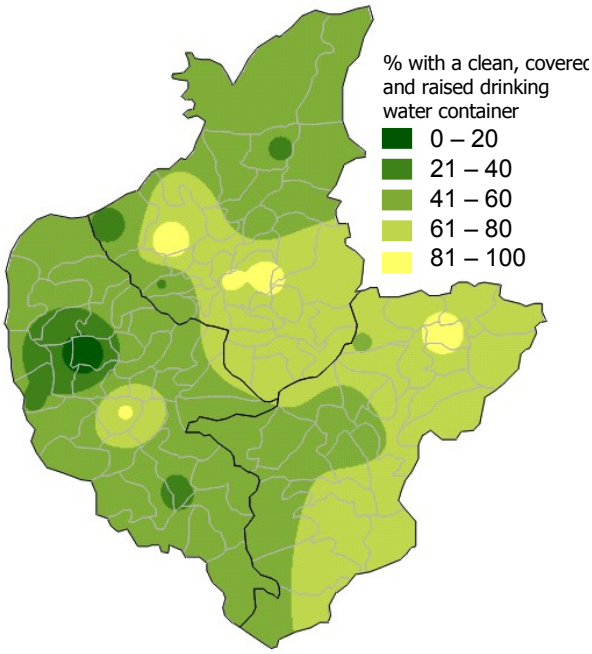


Figure 5 % households with covered, clean, raised drinking water container

Table 6 % households using and having latrines

	Use a latrine	Have a latrine
Daska	86	85
Pasroor	65	63
Sialkot	83	75
Sialkot District	80	76

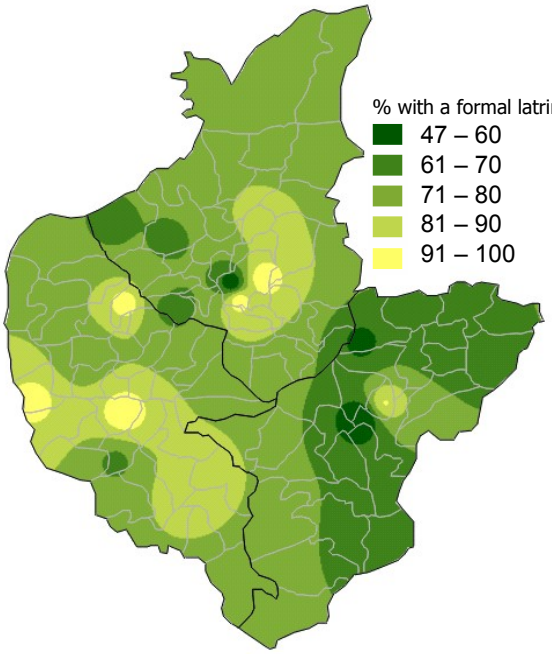


Figure 6 % households with a formal latrine

"Using open fields as latrines speeds up the spread of filth and dirt."
Male focus group, Pasroor tehsil

"When children go outside to urinate, there are so many flies that it is difficult to see our children."
Male focus group. Sialkot tehsil

"Having a latrine in the house does not make any difference to the likelihood of catching diarrhoea."
Male focus group, Daska tehsil

(395/490) of containers were covered, 87% (426/488) were clean, and 78% (377/486) were raised above ground level. Some 67% (323/486) met the ideal conditions of being covered, clean *and* raised (Table 5).

The map in Figure 5 shows the variation in proportion of households with a covered, clean, raised drinking water container across the district. In Sialkot, many households use piped water directly, so the water container was only examined in about a quarter of households. This makes the information about the state of the container of less importance.

Latrines

Across the district, 80% (1818/2272) of households used a latrine (mostly a household latrine). Some 76% (1715/2250) of households had some formal type of latrine. Most households without a latrine (91%; 382/419) said this was because they could not afford to have one. The proportions of households using a latrine and having a formal latrine in the household in the different tehsils are shown in Table 6.

The map in Figure 6 shows the variation in proportion of households with a formal latrine across the district.

Focus group views about latrines

The community focus groups (of men and women separately) in the sample communities discussed some of the issues around latrines. They first discussed whether, from what they knew, children from households where the members did not use a latrine seemed to get more diarrhoea. Most groups agreed this was the case. A few were not convinced that latrines made any difference, or considered that they were not necessary in villages surrounded by large fields that people could use for defaecation.

Coming to the issue of what could be done to help households install and use latrines, most groups

"Our neighbours can only destroy latrines that already exist; they cannot make new ones."
Male focus group, Daska tehsil

"Our children cry for books; what can we do about latrines?"
Female focus group. Sialkot tehsil

"We can only be patient and wait for money. "
Male focus group. Sialkot tehsil

"The big fish eat away our funds. They don't allow funds to reach the smaller fish."
Male focus group, Daska tehsil

considered that outside financial or technical support was needed, although some also mentioned the need to raise awareness of the benefits of latrines in some households. Most groups were of the opinion that there was little communities could do to help themselves, mentioning that they were too poor to help themselves. Generally they felt it was the responsibility of the government to help them. This help should, they suggested, be financial and technical. On the other hand, in some communities the focus groups suggested they needed to help themselves by making a collective effort, collecting financial contributions from within the community. Some people were sceptical about the government helping them even if there were funds to do so.

Table 7 % households observed with different hygienic conditions in and around the house

	Garbage	Sewage water	Excreta
Daska	37	27	20
Pasroor	54	49	41
Sialkot	44	38	27
Sialkot District	44	37	28

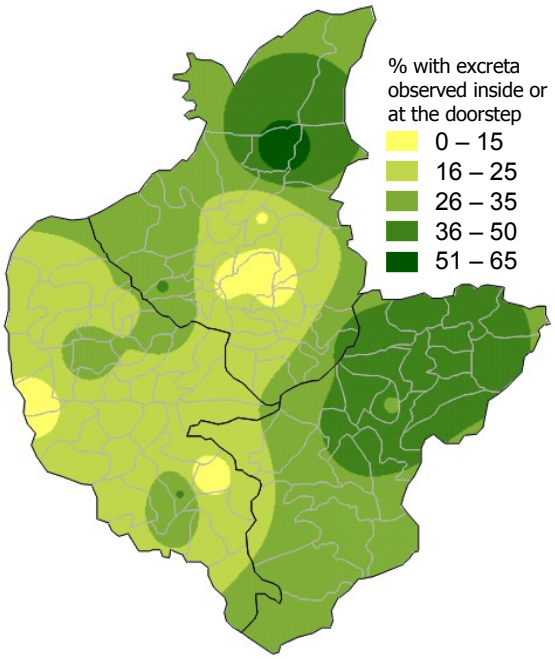


Figure 7 % households with excreta observed inside or at the doorstep

Table 8 Frequency of LHW visits to households

	% households
Never visited	36
Within the last month	58
More than a month ago, within last 6 months	5
More than 6 months ago, within last year	<1
More than one year ago	<1
N	2203

Household hygiene

The field teams conducting the household interviews observed and noted some aspects of household hygiene. They observed garbage in the household compound or at the doorway in 44% (989/2259) of households. They noted sewage water inside the compound or at the doorstep in 37% (825/2266) of households and excreta (animal or human) inside or at the doorstep of 28% (624/2262) of households. Table 7 summarises the observations about household hygiene in the four tehsils.

The map in Figure 7 shows the variation in proportion of households with excreta observed in or around the homestead across the district.

Information about prevention of diarrhoea from the lady health worker (LHW)

Some 65% (1541/2411) of mothers said an LHW visited their household. In some households more than one mother was interviewed. Among households, 64% (1466/2266) were visited too by an LHW, even if the last visit was long ago. More than half of the households (58%;1271/2203) reported that they were visited by a LHW within the last month (table 8) . Almost all the households among those visited (96%; 1403/1466) reported being visited within the last year.

Some 11% (168/1515) of those mothers reporting being visited by an LHW recalled that the LHW told them anything about preventing diarrhoea in children. When

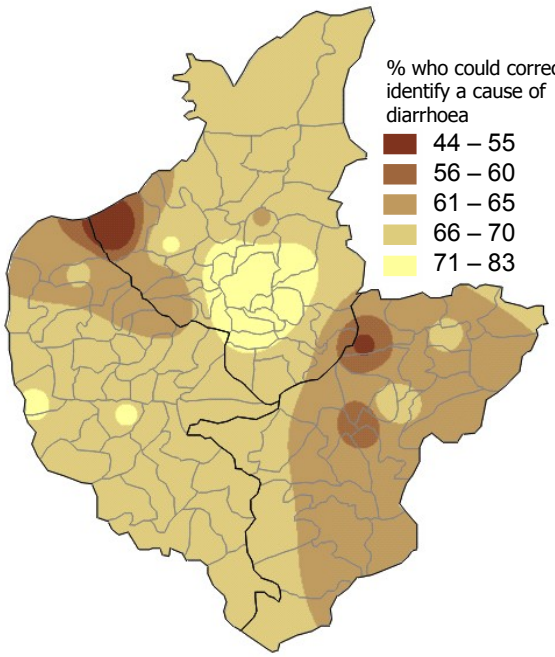


Figure 8 % of mothers who could correctly cite a cause of diarrhoea in children

Table 9 Variables potentially associated with the risk of diarrhoea in children

- Urban/rural location
- Tehsil
- Education of the household head
- Education of the mother
- Household vulnerability
- Sex of the child
- Age of the child
- Nutritional status of the child
- Mother's knowledge of causes of diarrhoea
- LHW advice about diarrhoea
- Protected water source
- Good water storage
- Household latrine
- Sewage in household or around door
- Excreta in household or around door
- Garbage in household or around door
- Garbage in streets (from community profile)
- Sewage in streets (from community profile)
- Stagnant water in streets (from CP)

Table 10 Model of effects of variables on risk of diarrhoea

	Crude OR	Weighted OR	95% CI of weighted OR
All children 0-59 months			
Educated mother	0.86	0.86	0.73-1.00
Younger children	1.95	1.97	1.66-2.34
Normal or big for age	0.71	0.71	0.57-0.88
Children 0-36 months			
Educated mother	0.82	0.88	0.72-1.07
Normal or big for age	0.71	0.71	0.55-0.92
Members use latrine	0.70	0.77	0.60-0.97

OR=Odds Ratio, a measure of relative risk

considering all mothers (including those not visited by an LHW) only 7% (168/2414) had been told by an LHW about prevention of diarrhoea.

The mothers' recall of what the LHW told them about prevention of childhood diarrhoea contrasts with the information from the interviews with LHWs covering some of the sample communities (see later section). Most of the LHWs reported telling the mothers they visited about prevention of diarrhoea.

Mothers' knowledge of causes of diarrhoea

About two thirds of mothers (66%; 1584/2386) could correctly identify a cause of diarrhoea in children. The map in Figure 8 shows the variation across the district in the proportion of mothers who could cite a correct cause of diarrhoea in children.

Analysis of risk of diarrhoea in children

We collected information about a number of variables that might be associated with the risk of diarrhoea in children. These are listed in Table 9. Several of these variables, examined separately, were associated with the risk of diarrhoea. We then undertook multivariate analysis to examine the effects of each of these variables, taking into account the effects of the others. Only three variables remained in the final model from this analysis, shown in Table 10.

Education of mothers
Children whose mothers had some formal education were less likely to have had diarrhoea than children whose mothers had no formal education[1].

Age of children
Younger children (0-36 months) were more likely to have had diarrhoea than older children (37-59 months)[2].

Nutritional status of children
Children considered by their mothers to be normal or big for their age were less likely to have had diarrhoea than children considered small for their age[3]. A mother's perception about her child's size for their age is a reasonably good indicator of the child's nutritional

[1]Weighted OR 0.86, 95% CI 0.73-1.00, 501/2001 children whose mothers had some education had diarrhoea compared with 371/1324 whose mothers had no education

[2] Weighted OR 1.97, 95% CI 1.66-2.34, 651/2119 younger children had diarrhoea compared with 225/1219 older children

[3] Weighted OR 0.71, 95% CI 0.57-0.88, 732/2888 children normal or big for age had diarrhoea compared with 142/441 considered small for age

Table 11 Potential gains in diarrhoea prevention among children aged 0-36 months

Intervention	Proportion requiring intervention (%)	Weighted risk difference	95% CI weighted risk difference	Weighted gain per 1000 children
All mothers with some education	37.8	0.0279	-0.0147-0.0706	11
All children well nourished	14.2	0.0901	0.0222-0.1580	13
All households to use a latrine	19.8	0.0615	0.0067-0.1162	15

Proportion requiring intervention means those who do not currently have the favourable condition, eg % whose households do not use a latrine

status. As well as poorly nourished children being at more risk of diarrhoea, frequent episodes of diarrhoea also contribute to childhood malnutrition.

Use of latrine

Considering only children aged less than 37 months, those from households where the members used a latrine were less likely to have had diarrhoea than those from households where the members did not use a latrine[4]. The effect of the non-use of latrines by household members is perhaps more pronounced in younger children who may be crawling or toddling around the household and less able to avoid contaminating themselves than older children.

We can estimate the number of children who could be protected from diarrhoea by different interventions. In Table 11, the "gain" per thousand children is the number of children who could be saved from having diarrhoea if all children had the intervention in question. If an intervention ensured that members of all households used a latrine, this could prevent diarrhoea in 15 per thousand children under 37 months old but would have little effect on diarrhoea in older children. The relatively modest gain in this case is because in most households in Sialkot the members already use a latrine.

Treatment of diarrhoea in children

The following descriptions of experiences with treating diarrhoea are based on the 72% (2417/3338) of children less than 60 months old who had suffered an episode of diarrhoea in the last 12 months. Recall of episodes longer than 12 months ago is less likely to be clear.

Advice from the LHW

Few of those mothers reporting being visited by an LHW (19%; 281/1531) recalled that the LHW told them anything about treating diarrhoea in children. When considering all mothers (including those not visited by

[4] Weighted OR 0.77, 95% CI 0.60-0.97, among children under 37 months old 499/1706 from households using a latrine had diarrhoea compared with 152/412 from households not using a latrine

an LHW) only 12% had been told about treatment (281/2414) of diarrhoea.

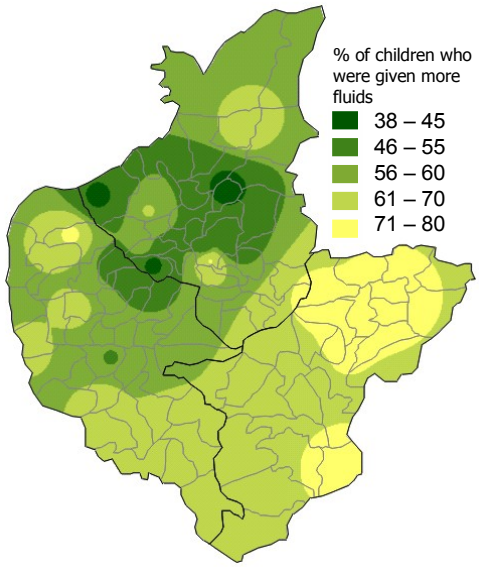


Figure 9 % children under 5 years old given more fluids during last episode of diarrhoea

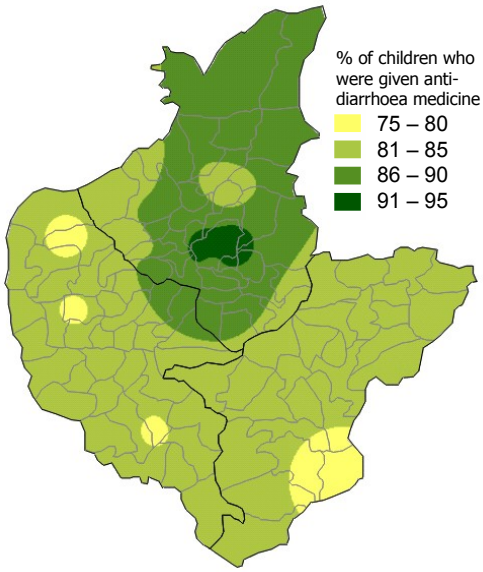


Figure 10 % children under 5 years old given anti-diarrhoea medicine during last episode of diarrhoea

"If the level of water in his body becomes low, the child will die."
Female focus group, Sialkot tehsil

Mothers' knowledge and household management of diarrhoea

Some 67% (1627/2397) of mothers reported they would give a child more fluids during an episode of diarrhoea while 50% (1208/2395) said they would give the child either the same or more food.

When actually treating an episode of diarrhoea in the last 12 months in children under five years old, mothers provided 61% (1482/2401) of the children with more fluids and 53% (1289/2393) with either the same or more food. The variation across the district in the proportion of children given more fluids in their last episode of diarrhoea during the last year is shown in the map in Figure 9.

In most cases (84%; 2003/2396) the mothers or other carers in the home gave the child medicine to stop the diarrhoea. The variation across the district is shown in Figure 10. This is generally <u>not</u> good practice and these anti-diarrhoeal medications can be dangerous for young children. However, it is clearly a common practice, both in home management and prescribed by health care practitioners (see below).

Focus group views about fluids for children with diarrhoea

Clearly not all mothers or caregivers know to give children with diarrhoea extra fluids, and even less manage to do this in practice. We discussed this in the community focus groups.

The groups first discussed why many mothers *do* give extra fluids to children with diarrhoea. Participants explained that giving fluids prevented children from becoming sick with dehydration. Some also mentioned that the child would be thirsty and ask for water, while others noted that it could avoid having to take the child for medical attention outside the home.

"They are rural women. They don't know how much water to give to a child during diarrhoea."
Female focus group, Pasroor tehsil

"Parents who have many children don't attach much value to any of them."
Male focus group, Sialkot tehsil

"Young girls must be given such lessons once a week in schools since they will become mothers in future."
Male focus group, Daska tehsil

"Only doctors can make mothers understand. But we don't have a doctor around here. "
Female focus group, Sialkot tehsil

In discussing why some mothers do *not* give children with diarrhoea extra fluids, most groups mentioned poor education or lack of awareness among mothers, while others noted that mothers not giving extra fluids were careless, do not have time to give the extra fluids or that they had misconceptions about adverse effects of giving extra fluids.

The groups suggested that health workers, especially LHWs, community and religious leaders, and parents or other family members could give the message about extra fluids to mothers.

Taking children with diarrhoea for treatment

Among those children less than 60 months old who had suffered diarrhoea in the last 12 months, 23% (551/2407) were not taken anywhere for treatment. The most popular choice for treatment was an unqualified practitioner. Some 42% (1016/2407) of those children with diarrhoea were taken to an unqualified practitioner, 29% (676/2407) to a private facility or practitioner, only 4% (100/2407) to a government facility, and 3% (59/2407) to an NGO service. The type of service used is shown by tehsil in Table 12.

Table 12 % children taken to different types of facilities for treatment of diarrhoea in the past 12 months

	No where	Gov't facility	Private facility	Unqualified	NGO
Daska	26	3	24	46	<1
Pasroor	23	7	22	45	2
Sialkot	20	3	36	37	5
Sialkot District	23	4	29	42	3

The variation across the district in the proportion of children with diarrhoea taken somewhere for medical care is shown in the map in Figure 11.

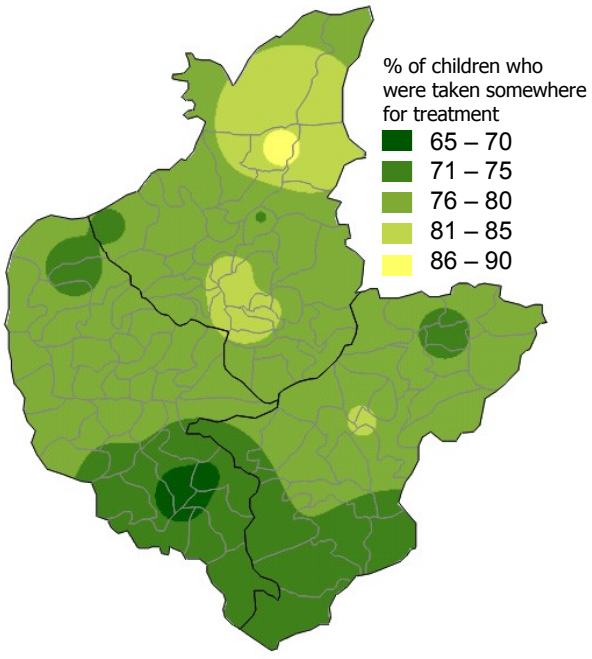


Figure 11 % children under 5 years old taken for treatment during their last episode of diarrhoea

Experience of treatment for diarrhoea

Virtually all children (1842/1850) who were taken for treatment were seen by a doctor/ practitioner or health worker regardless of the type of facility they went to.

ORS and other medication

Children taken to a government facility for treatment were more frequently provided with ORS (55%; 56/100) than children taken to either a private facility (43%; 288/671) or an unqualified practitioner (32%; 326/1009). Unqualified practitioners (90%; 915/1009) more commonly provided any other medicines if prescribed than did government (68%; 69/100) and private facilities (56%; 378/669 facilities (Figure 12). We do not know what these other medicines were nor in how many cases any other medicines were prescribed.

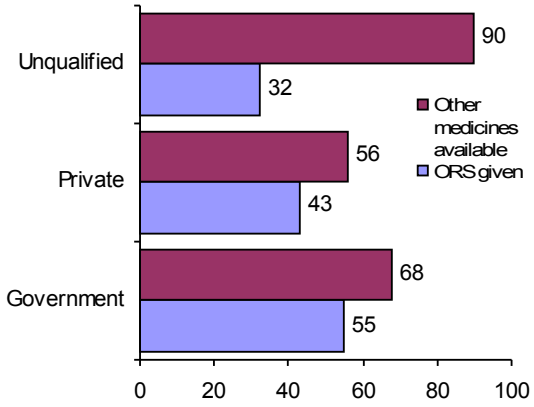


Figure 12 % of children provided ORS and availability of other medicines from health facilities or practitioners

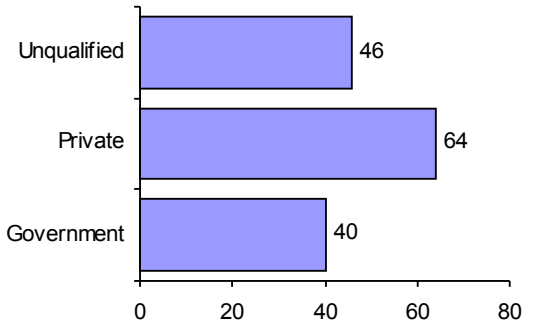


Figure 13 % of mothers of children with diarrhoea who thought they got a full explanation of their child's illness

Table 13 Why mothers were satisfied with the treatment from the facility (% mothers)

Reasons	Govt	Private	Unqualified
Good doctor/staff	3	7	3
Good treatment	97	93	96
Good access/nearby	-	-	<1
N	91	639	935

Table 14 Why mothers were dissatisfied with the treatment from the facility (% mothers)

Reasons	Govt	Private	Unqualified
Good doctor/staff not available	-	-	5
Poor facilities/services	13	-	1
Poor treatment	87	100	88
Too expensive/can't afford	-	-	3
No other choice	-	-	3
N	8	29	78

In most cases no "other medicines" should be prescribed. Anti-diarrhoea medicines can be dangerous in young children, and antibiotics are not advisable in most cases of diarrhoea. Government services apparently gave more ORS than the other two services but we do not know if they prescribed less "other medicines" than the other service providers.

Explanation of illness

More of the parents who took their child to a private practitioner or clinic felt they were given a full explanation about the child's condition (64%; 416/645), than the parents who took their child to an unqualified practitioner (46%;442/967) or a government facility (40%; 39/99), where less parents declared to have got an explanation about the illness (Figure 13).

Satisfaction with service received

Generally, satisfaction with the behaviour of the doctor or health worker was high. Satisfaction among users of private practitioners (97%; 654/671) and unqualified (96%; 968/1010) was greater than among users of government facilities (93%; 94/100). But for all service types, 9 or more out of every 10 parents of children with diarrhoea said they were satisfied with the behaviour of the doctor or health worker.

Similarly, nearly all mothers were satisfied with the treatment received from the facility for all facility types. Some 91% (92/100) were satisfied with the treatment at a government facility, 96% (644/674) were satisfied with treatment from a private facility and 92% (935/1013) were satisfied with their treatment an unqualified practitioner.

For all facility types mothers most frequently reported being satisfied with the treatment at the facility simply because they received "good treatment". Some were satisfied because of the good doctors and staff available at the facility (Table 13).

Those few people who were dissatisfied with the facility most commonly simply cited "poor treatment" as their reason for all types of facilities. Other reasons mentioned are shown in Table 14.

Costs of treatment

Travel

Table 15 % cases that paid, mean and median amounts paid (of those who paid) for travel for treatment of diarrhoea

Facility type	% cases paid	Mean amount (Rs)	Median amount (Rs)
Government	38 (38/100)	91	30
Private	58 (398/670)	83	30
Unqualified	21 (211/1012)	44	20

In 38% (38/100) of cases where children were taken for treatment to a government facility, families had to pay something for travel. The mean amount for these families was Rs91. For private treatment families had to pay for travel in 58% (398/670) of cases with a mean amount of Rs83. Less families who took their children to unqualified practitioners had any travel costs (21%; 211/1012) averaging Rs44. (Table 15)

Treatment at the facility

Table 16 % cases that paid, mean and median amounts paid (of those who paid) for diarrhoea treatment at the facility

Facility type	% cases paid	Mean amount (Rs)	Median amount (Rs)
Government	94 (93/99)	201	2
Private	96 (639/664)	385	100
Unqualified	98 (978/1001)	74	40

Most families had to pay for treatment at the facility or practitioner for all types of facilities. The mean amount paid at an unqualified practitioner (Rs74) was less than that paid at either a government (Rs201) or a private facility (Rs385) (Table 16)

Medicines or investigations outside the facility

Table 17 % cases that paid, mean and median amounts paid (out of those who paid) for diarrhoea medicines or investigations outside the facility

Facility type	% cases paid	Mean amount (Rs)	Median amount (Rs)
Government	32 (30/98)	741	120
Private	44 (290/666)	690	200
Unqualified	9 (88/1001)	180	80

few less than half the cases going for treatment to a private facility (44%; 290/666) and one third of those going to government facility (32%; 30/98) had to pay for medicines or investigations outside the facility. Families had to pay in fewer cases (9%; 88/1001) when getting treatment at unqualified practitioners. The mean amount paid for medicines or investigations after visiting a government facility (Rs741) was higher than for either a private (Rs690) or an unqualified facility (Rs180). (Table 17)

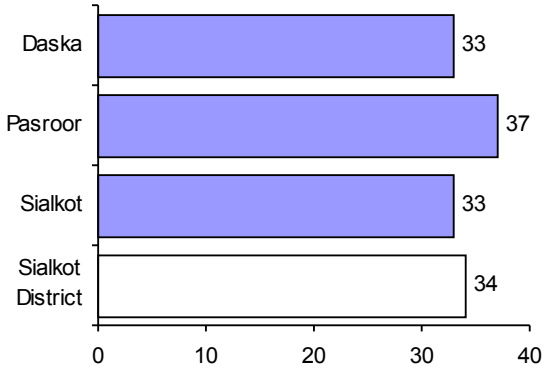


Figure 14 % of children under 60 months old with ARI during the last 2 weeks

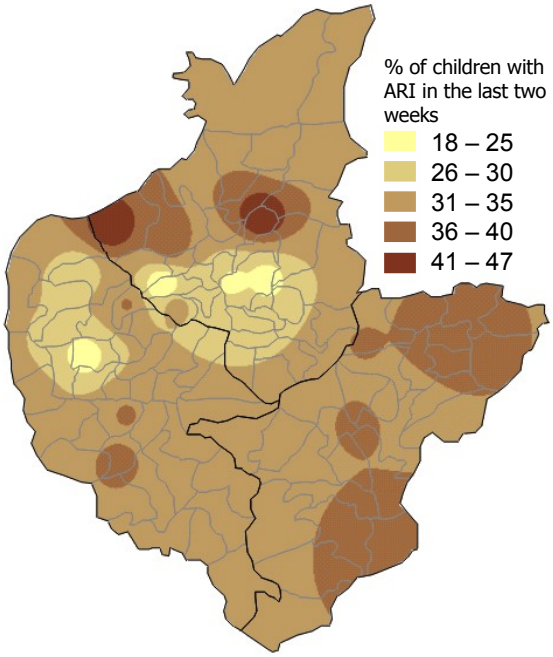


Figure 15 % children under 5 years old with ARI in the last two weeks

Table 18 % households with different stove types for cooking

Stove type	% households
Sui gas stove	24
Wood stove	27
Coal stove	<1
Kerosene stove	1
Electric stove	<1
Cow dung	42
Gas cylinder	5
N	2269

Childhood respiratory infections

Frequency of childhood respiratory infections

Among children aged less than 60 months, 34% (1144/3400) had suffered an acute respiratory infection (ARI) during the last two weeks and 76% (2623/3400) suffered from ARI during the past year. The information about episodes of ARI came from the mother or main carer of the child. They were asked about episodes when the child had a cough, fever and rapid breathing.

The proportions of children with ARI during the last two weeks are shown by tehsil in Figure 14. There is little overall variation between tehsils in the rate of ARI in children.

The map in Figure 15 shows the variation across the district in proportion of children under 60 months old with ARI in the last two weeks.

Variables potentially related to ARI

The field teams collected information about factors at household level that might have an impact on the risk of respiratory infections in children.

Kitchen and cooking arrangements

Three quarters (74%; 1680/2274) of households had their kitchen or cooking area separate from the main living area. And 86% (1952/2274) had their kitchen or cooking area separate from the sleeping area.

The types of cooking stove used are shown in Table 18. They were mostly cow dung stoves. We categorized stoves into those producing smoke and those not producing smoke on the basis of the type of fuel. Across the district 29% (639/2269) of households used a cooking stove that did not produce smoke.

Table 19 % households with different heating systems

Heater type	% households
None	62
Sui gas heater	14
Wood heater	8
Coal heater	8
Kerosene heater	<1
Electric heater	1
Cow dung	6
Gas cylinder	<1
N	2269

Heating arrangements

Table 19 shows the heating methods used in households. Some 38% (837/2269) of households used some type of heating system, mostly wood stoves. We categorised heating systems into those producing smoke and those not producing smoke. Some 78% (1777/2269) of households used a heating system not producing smoke (or no heating system at all) and 22% (492/2269) used a heating system likely to produce smoke.

Smoking in the household

We asked about smoking by members of the household, and in particular about smoking within the household. Some 56% (1272/2267) of households had a least one member who smoked inside the household.

Ventilation

The field teams observed ventilation arrangements in the households. They recorded some sort of ventilation system in 88% (1982/2248) of households across the district.

Focus group views about smoke in the household

There is evidence from the literature that exposure to smoke in the household, through cooking stoves, heating arrangements, or smoking by members of the household, increases a child's risk of ARI and can have adverse long term consequences for lung development. In the community focus groups we discussed what could be done to improve the household environment so as to prevent children's exposure to smoke.

The group participants suggested using alternative fuels, providing more ventilation, keeping the kitchen and sleeping areas separate, and ensuring that household members did not smoke indoors. However, they also mentioned problems with implementing these ideas.

The groups suggested that while they themselves could do things like forming committees to create awareness, the government would have to help, for example by giving funds to improve ventilation in homes or providing access to gas as a fuel.

"The only solution is though access to gas".
Male focus group, Daska tehsil

"Household members who smoke must be strangled."
Female focus group, Pasroor tehsil

"Girls of today can control their husbands. They should urge them not to smoke."
Female focus group, Sialkot tehsil

"The gas pipeline runs very close to our community. But we don't have access to it."
Female focus group, Pasroor tehsil

"The government should spray tobacco crop with a dangerous drug so that the crop may be destroyed."
Female focus group, Pasroor tehsil

Analysis of risk of childhood ARI

As described above, we collected information about several variables that might be associated (positively or negatively) with the risk of ARI in children (ARI in the last two weeks in children aged less than 60 months old). These are listed in Table 20.

Table 20 Variables potentially associated with the risk of ARI in children

- Urban/rural location
- Tehsil
- Education of the household head
- Education of the mother
- Household vulnerability
- Sex of the child
- Age of the child
- Nutritional status of the child
- Measles vaccination of the child
- Household heating system
- Heating system producing smoke
- Kitchen separate from living area
- Sleeping area separate from kitchen
- Cooking stove producing smoke
- Ventilation for household
- Household members smoking inside

We found no association between most of these variables and the risk of ARI in the last two weeks. The only three variables that were associated with the risk of ARI were urban or rural location, education of the head of the household and sex of the child. We examined the effects of these three variables together, each taking into account the effect of the others.

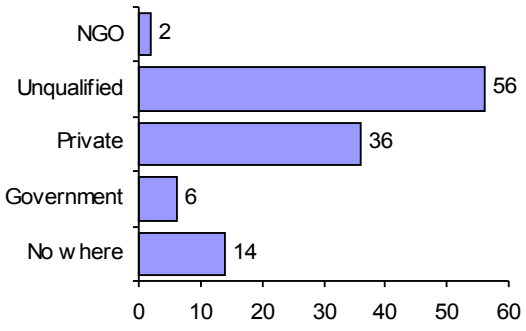
Urban or rural location
Children from rural areas were more likely to have had ARI in the last two weeks, compared with children from urban areas[5]. This may reflect different living conditions between urban and rural areas.

Education of the head of the household
Children from households where the head had no formal education were more likely to have had ARI in the last two weeks than children from households where the head had some formal education[6].

Sex of the children
Female children were less likely to have had ARI during the last two weeks than male children[7]. The reason for this difference is not clear, and we cannot rule out under-reporting of ARI among girls.

This analysis does not identify immediately actionable factors to reduce the rate of ARI. The reasons behind the higher rate of childhood ARI in rural areas compared with urban areas may be worth exploring further.

[5] Weighted OR 1.28, 95% CI 1.08-1.51, 885/2523 rural children had ARI compared with 259/877 urban children
[6] Weighted OR 1.21, 95% CI 1.05-1.40, 486/1333 children from households where the head had no formal education had ARI compared with 654/2057 children from households where the head had some formal education
[7] Weighted OR 0.81, 95% CI 0.70-0.93, 528/1681 female children had ARI compared with 616/1719 male children



F igure 16 % children with ARI taken to different health care providers

Table 21 % children taken to different types of facilities for treatment of ARI in the past 12 months

	No where	Gov't facility	Private facility	Unqualified	NGO
Daska	16	5	26	53	0.5
Pasroor	13	7	25	53	2
Sialkot	14	4	38	40	4
Sialkot District	14	5	31	48	2

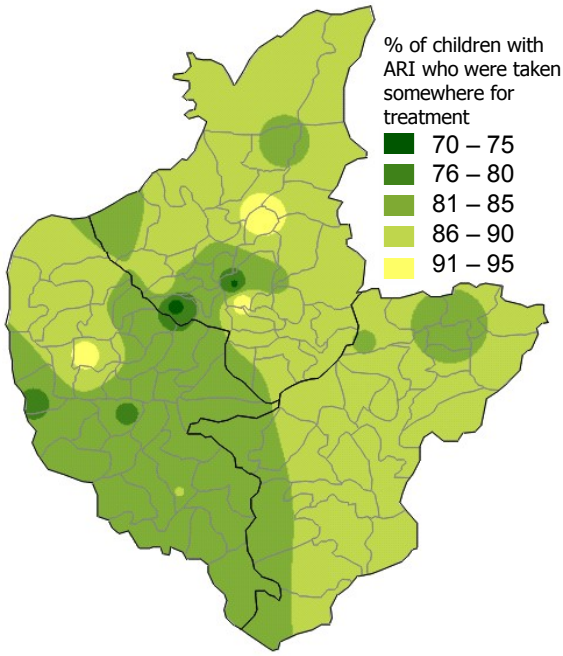


Figure 17 % of children under 60 months old with ARI in the last 12 months who were taken somewhere for treatment

Information from the lady health worker

Of the 65% (1541/2411) of mothers that reported an LHW visited their household only 1% (17/1523) recalled that the LHW told them anything about recognising when a child has ARI and just 5% (80/1531) recalled being told anything about treating a child with ARI.

Considering all mothers, including those not visited by an LHW, only 0.7% (17/2414) were told by an LHW about recognition of ARI and 3% (80/2414) about treatment for ARI.

Treatment of ARI

The following description of experiences with treating ARI is based on the 76% if children under 60 months who had suffered an ARI episode in the last 12 months. Recall of episodes longer than 12 months ago is less likely to be clear.

Source of treatment

Among those children less than 60 months old and who suffered an ARI episode in the last 12 months, 14% (374/2614) were not taken anywhere for treatment. The most common choice for treatment was an unqualified practitioner. Across the district, 48% (1265/2240) were taken to a private non-qualified practitioner, 31% (784/2240) were taken to a private, qualified practitioner, only 5% (140/2240) were taken to a government facility, and 2% (50/2240) were taken to an NGO service (Figure 16). Table 21 shows the proportions of children taken to different types of facilities for treatment for ARI in each tehsil.

The map in Figure 17 shows the variation across the district in the proportion of children with ARI taken anywhere for treatment.

Views of community focus groups

The focus groups discussed why some children with ARI are not taken anywhere for treatment. They also considered the ways in which could be encouraged and supported to take children with ARI for treatment.

"Two of my children died because I did not have money for their treatment.".
Female focus group, Sialkot tehsil

"Even if we get to a doctor, we do not get medicines."
Male focus group, Sialkot tehsil

"We have to start bribing our way inside government hospitals, starting with the gate keeper."
Male focus group, Sialkot tehsil

"The main reason for this is the belief in household remedies."
Male focus group, Pasroor tehsil

"Doctors must be banned from practicing privately."
Male focus group, Daska tehsil

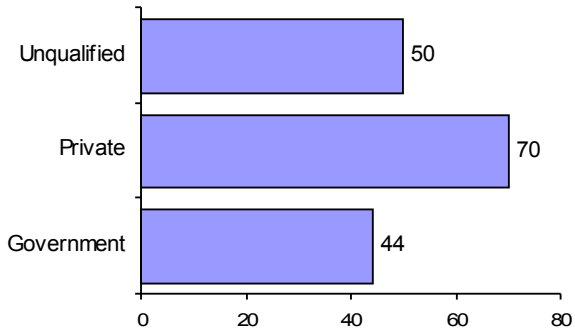


Figure 18 % mothers/caregivers provided with a full explanation of their child's illness, for children with ARI

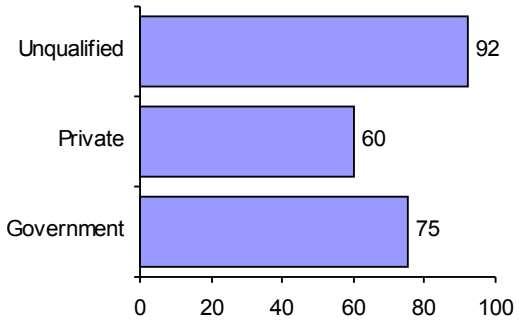


Figure 19 % of parents of children with ARI provided with all medicines prescribed

Focus group participants explained the problems of poverty, meaning they could not afford the visit, and especially the cost of medicines which were usually not available in government health facilities, and of lack of access to health facilities. A few expressed the view that the children would get better without the need for taking them for treatment or even that some parents did not pay attention to the needs of their children.

The main suggestions from the groups to support people to take their children with ARI for treatment were concerned with better access to health facilities, as well as more medicines available in health facilities, and better treatment from doctors and health workers.

Service received from health care providers

Almost all children (99%; 2172/2190) who were taken for treatment were seen by a doctor or health worker regardless of the type of facility they went to.

Private practitioners provided a full explanation of the child's illness more often than either government or unqualified practitioners. Private practitioners provided a full explanation for 70% (527/753) of children, unqualified practitioners for 50% (586/1166) of children and government practitioners for 44% (59/136) of children (Figure 18).

There was greater variation between facility/practitioner types around providing all the prescribed medicines when the child with ARI was taken for treatment. Parents taking their children with ARI to an unqualified practitioner were more frequently (92%; 1119/1215) provided with all medicines than those who sought treatment at a government (75%; 107/143) or private (60%; 462/768) facility (Figure 19).

Satisfaction with treatment received

Nearly all mothers were satisfied with the behaviour of the doctor or health worker (97%; 2107/2174) and with the treatment from the facility (94%; 2053/2182) for all facility types.

For all three types of facilities or /practitioners the most common reason for being satisfied was the "good treatment" received (94%; 1918/2040) followed by the good doctors/ staff at the facility (5%; 108/2040).

Those few parents who were dissatisfied with the facility most commonly cited "bad treatment" as their reason (97%; 116/126), for all types of facilities. Not having any other choice (3/126) and poor facilities or services (3/126) were also mentioned.

Costs of treatment of ARI

Travel

In 41% (55/137) of cases where children were taken for treatment to a government facility, families had to pay something for travel. The mean amount for these families was Rs64. For private treatment families had to pay in 60% (464/760) of cases with a mean amount of Rs61. Few families who took their children to unqualified practitioners had any travel costs (19%; 234/1214) averaging Rs29. (Table 22)

Table 22 % cases that paid, mean and median amounts paid (out of those who paid) for travel for treatment of ARI

Facility type	% cases paid	Mean amount (Rs)	Median amount (Rs)
Government	41 (55/137)	64	20
Private	60 (464/760)	61	30
Unqualified	19 (234/1214)	29	20

Treatment costs at the facility

Most families had to pay for treatment at the facility or practitioner for all types of facilities. The mean amount paid at an unqualified practitioner (Rs61) was less than that paid at either a government (Rs162) or private facility (Rs253). (Table 23)

Table 23 % cases that paid, mean and median amounts paid (out of those who paid) for ARI treatment at the facility

Facility type	% cases paid	Mean amount (Rs)	Median amount (Rs)
Government	89 (123/140)	162	2
Private	96 (729/756)	253	75
Unqualified	97 (1154/1192)	61	35

Medicine or investigation costs outside the facility

In some 41% (304/755) of the cases of children taken for treatment at a private qualified practitioner and in 22% (30/136) of those taken to government facility, families had to pay for medicines or investigations outside the facility. Families had to pay in fewer cases (8%; 87/1208) after getting treatment at unqualified practitioners.

The mean amount paid after visits to an unqualified practitioner (Rs125) was less than after visits to either a government (Rs414) or a private qualified facility (Rs308). (Table 24)

Table 24 % cases that paid, mean and median amounts paid (out of those who paid) for ARI medicines or /investigations outside the facility

Facility type	% cases paid	Mean amount Rs)	Median amount (Rs)
Government	22 (30/136)	414	75
Private	41 (304/755)	308	150
Unqualified	8 (87/1208)	125	70

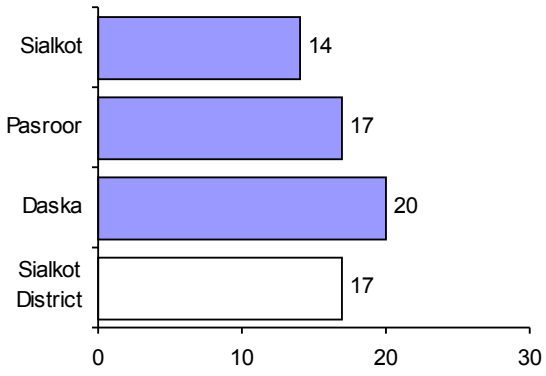


Figure 20 % children aged 10-59 months who have had measles (excluding measles cases at under 10 months old)

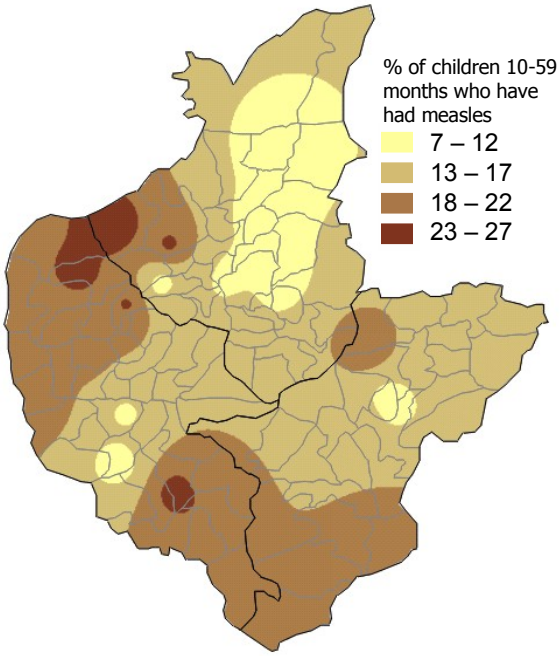


Figure 21 % children 10-59 months who have had measles (excluding cases of measles at less than 10 months old)

Table 25 Variables potentially associated with the risk of measles in children

- Urban/rural location*
- Tehsil*
- Education of the household head
- Education of the mother*
- Household vulnerability*
- Sex of the child
- Age of the child*
- Nutritional status of the child
- Measles vaccination of the child*

* variables related to risk of measles in univariate analysis

Childhood measles

Frequency of childhood measles

The following analysis and description of the frequency of measles excludes children who were less than 10 months old at the time of the survey as well as those children who had measles at less than 10 months of age because diagnosis of measles in children under 10 months of age can be unreliable.

Among children 10-59 months old 17% (456/2707) had had measles, excluding measles cases at under 10 months old. The rate of measles infection in the different tehsils is shown in Figure 20.

The map in Figure 21 shows the variation across the district in the proportion of children aged 10-59 months who have had measles.

Analysis of risk of measles

We collected information about a number of variables that might be associated with the risk of measles in children. These are listed in Table 25. We excluded from the analysis cases of measles that occurred before measles vaccination or within one month after the vaccination (it takes a month for protection to be fully developed). Variables associated with the risk of measles are marked with a (*). We then examined the effects of each of these variables, taking into account the effects of the others. The multivariate analysis model is shown in Table 26.

Age of the child
Younger children were less likely to have had measles than older children[8]. This may simply reflect that they have had a longer time at risk, since we are examining the risk of *ever* having had measles.

Household vulnerability
Children from less vulnerable households were less likely to have had measles than children from vulnerable households[9]. One reason for this might be overcrowding: the definition of household vulnerability included a high number of people per room.

[8] Weighted OR 2.84, 95% CI 2.28-3.52, 1353/1515 children aged 10-36 months did not have measles compared with 898/1192 children aged 37-59 months

Education of the mother
Children whose mothers had some formal education were less likely to have had measles than those whose mothers had not any formal education[10].

Measles immunisation
Children who had not been immunised against measles had twice the risk of having measles compared with children who had been immunised[11]. This is the protective effect of measles vaccine, taking into account other variables potentially related to the risk of contracting measles

Table 26 Model of effects of variables on the chance of *NOT* having measles

	Crude OR	Weighted OR	95% CI of weighted OR
Age less than 37m	2.71	2.84	2.28-3.52
Less vulnerable hh	1.58	1.36	1.08-1.71
Educated mother	1.65	1.37	1.10-1.71
Measles vaccine	1.76	1.93	1.37-2.72

OR=Odds Ratio, a measure of relative risk

Population benefit from measles immunisation

We can estimate the number of children in the population of Sialkot District who could be prevented from having measles if all children were immunised against measles. If all children were immunised against measles, this could reduce the number of cases of measles in the district by 11 per thousand children (Table 27). The rate of measles vaccination is already high in the district so relatively few children would benefit if vaccination was extended to cover the remaining unvaccinated children.

Payment for cases of measles

We asked mothers whose children had had measles about the cost of treating the child. To ensure recall of events, we only analysed cases of measles in the last 24 months, among children 10-59 months old. Some 61% (196/326) of parents paid something for the treatment of measles. Among those who paid, the weighted mean amount was Rs340 (median Rs100, range 10-6000).

Table 27 Potential gains in measles prevention in children 10-59 months old

Intervention	Proportion requiring intervention (%)	Weighted risk difference	95% CI weighted risk difference	Weighted gain per 1000 children
Reduce household overcrowding	28.1	0.046	0.012-0.072	13
Ensure education of mothers	39.6	0.042	0.013-0.072	17
Ensure all children are vaccinated	9.0	0.125	0.060-0.190	11

Proportion requiring intervention means those who do not currently have the favourable condition, eg % who are unvaccinated

[9] Weighted OR 1.36, 95% CI 1.08-1.71, 1636/1927 children from less vulnerable households did *not* have measles compared with 586/748 children from vulnerable households

[10] Weighted OR 1.37, 95% CI 1.10-1.71, 1398/1629 children whose mothers had some formal education did *not* have measles compared with 843/1067 children whose mothers did not have any formal education

[11] Weighted OR 1.99, 95% CI 1.42-2.78, 2052/2431 children who had received measles vaccine did *not* have measles compared with 183/241 children who had not received measles vaccine

Table 28 % children 12-23 months immunised

	BCG	DPT (full course)	Measles	Polio drops (in last 12 m)
Daska	93	87	82	100
Pasroor	99	95	93	100
Sialkot	94	85	86	100
Sialkot district	95	88	86	100

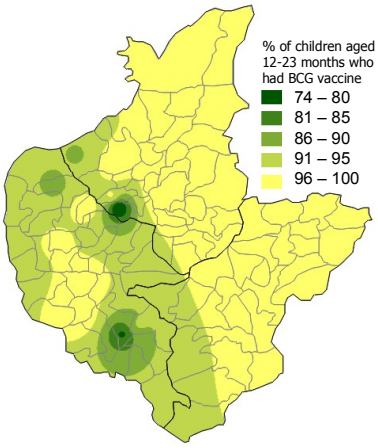


Figure 22 % children 21-23 months who had BCG

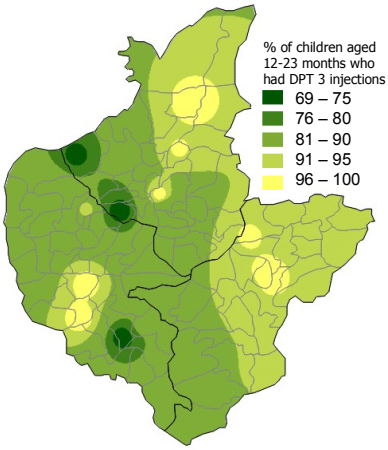


Figure 23 % children 12-23 months who had full course of DPT injections

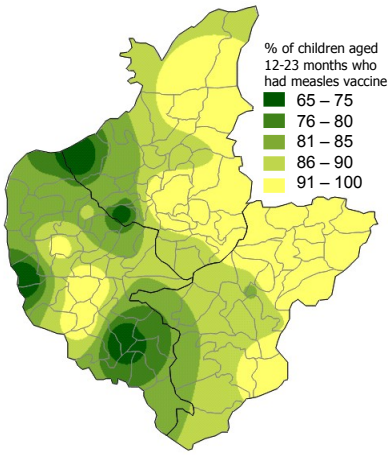


Figure 24 % children 12-23 months who had measles vaccine

Childhood immunisations

Immunisation status of the children

In this section, the immunisation status of the children is described among children aged 12-23 months old, who should by then have completed all their immunisations. Table 28 summaries the immunisation status of children across the district, for the basic childhood vaccines.

BCG

Some 95% (651/686) of the children aged 12-23 months had received BCG vaccine, normally given at birth or soon after (Table 28). The map in Figure 22 shows the variation in BCG vaccination rate across the district.

DPT

Among the children aged 12-23 months, 95% (650/686) had received at least one DPT injection, and 88% (602/686) had received at least three injections (or a 'full course') during their first year of life. We may have over-estimated the number of children who received three injections of DPT vaccine because we included children whose mothers were only able to say they had "completed the course" without saying how many injections this comprised. The proportion of children who had received three injections, or a full course, of DPT vaccine, was rather lower in Sialkot than in other tehsils, and highest in Pasroor tehsil (Table 28). The map in Figure 23 shows the variation in rate of completion of a full course of DPT vaccine across the district.

Measles

Some 86% (590/685) of children aged 12-23 months had received the measles vaccine, usually given at around nine months old. The measles vaccine is the last in the series of childhood vaccines, and many children have apparently "dropped out" of the immunisation schedule before the age of nine months. Daska tehsil had the lowest rate of measles immunisation and Pasroor tehsil had the highest rate (Table 28). The variation in measles immunisation rate across the district is shown in the map in Figure 24.

Polio

Among children aged over 12-23 months, 100% (681/682) had received polio drops at least once in the last 12 months. This was also the case when all children aged 12-59 months were included (100%; 2688/2692) (Table 28). Many of the children had received polio drops several times during the last year, with mothers reporting they got them "every time" the polio team visited.

Why children are not immunised

Table 29 Reasons why children (12-59 months) are not immunised

Reasons	% children
No facility nearby/difficult access	16
Lack of awareness	7
Carelessness of family	39
Vaccination would cause harm	14
Don't have time/ no one to take child	12
Don't believe in it / no tradition	5
Family does not allow	4
Can't afford it / too poor	2
N	252

For each child (12-59 months) that had not received all the immunisations (or any of them), we asked the mother or main caregiver why not. The mothers most commonly cited problems of access: either that the health facility for immunisations was too far away or that the family could not spare the time of someone to take the child for immunisation. Table 29 shows the reasons given for children not being immunised. Carelessness or lack of awareness implied that immunisation of children was not prioritised by the family over other calls on their time and household economy. Some mothers said they thought vaccination caused harm or that they did not believe in it.

Views from community focus groups

"Girls are married off at a young age. They don't know anything about these things."
Female focus group, Sialkot tehsil

"Uneducated people cannot understand this."
Female focus group, Pasroor tehsil

"The government has failed to make people aware about the dangers of this disease."
Male focus group, Daska tehsil

"Some people say they have placed their children in Allah's protection."
Female focus group, Sialkot tehsil

"Children get measles even when they are immunized against it."
Female focus group, Sialkot tehsil

"Illiterate mothers-in-law stop their daughters-in-law from getting their children immunized."
Female focus group, Daska tehsil

"People think these injections are meant for family planning purposes."
Male focus group, Daska tehsil

"It is common knowledge that polio drops come from America and are in fact harmful for children. The same is true for these other vaccinations."
Female focus group, Pasroor tehsil

The community focus groups explored the reasons why some families did not have their children immunised. The participants were asked if they thought parents who did not immunise their children understood the risk they were taking and why they might still not immunise even if they did understand the risk.

Most of the focus groups agreed that probably people did not fully understand the risk they were taking by failing to immunise their children. Mostly they ascribed this to lack of education. Some mentioned that people did not realise how serious measles could be.

To explain why people who understood the risk would still not immunise their children, the groups mentioned carelessness, and women not being allowed to take their children for vaccination. Some groups mentioned fears and misconceptions about adverse effects of immunisation. Others said that they did not have time to take the children to for vaccination and ascribed this to poverty.

"Health workers use the same syringe, and charge money from us for a new one."
Female focus group, Sialkot tehsil

"People who come to vaccinate our children are ordered by the government to go door-t-door. However, they just sit in one house."
Female focus group, Daska tehsil

"Vaccination teams come here for free meals. They don't vaccinate children."
Male focus group, Sialkot tehsil

"Teams must go door-to-door to immunize children. Parents who refuse to have their children immunized must be fined."
Female focus group, Daska tehsil

Some groups complained about vaccination services, mentioning problems of visiting teams falsely inflating the number of children they actually immunised in a community, or mothers not finding vaccine or vaccinators when they visited health facilities. Others explained their families did not have a tradition of vaccination.

To help parents to have their children immunised, the groups suggested both increasing public awareness of the importance of immunisation, and at the same time increasing access to immunisation services. The idea of visiting immunisation teams was especially popular, but participants also mentioned improving access to health facilities offering immunisation.

Mothers' knowledge and perceptions about immunisations

Awareness about immunisation

Some 98% (2365/2408) of the mothers (or carers) had heard about immunisation for children from some source. Mothers sometimes gave more than one source for their information. Their sources of information about immunisation for children are shown in Table 30. Their most common source of knowledge is from family, neighbours, friends and doctor/hospital. This information is really only about the logistics of getting the child to an immunisation point, rather than anything about the vaccines and their effects.

Table 30. Mothers' sources of information about immunisation for children

Indicator	% mothers
Announcement	12
Electronic media	21
Family, neighbours, friends	25
Doctor/hospital	25
Vaccination team	11
LHV/ LHW/ Dai	8
Written material (newspapers, books, pamphlets)	1

Among the mothers, 89% (2116/2392) were able to mention at least one illness preventable by immunisation. In some cases, their perceptions about which diseases could be prevented by immunisation were incorrect. For example, some mothers thought "all illnesses" could be prevented by immunisation. Including only correct perceptions about diseases preventable by immunisation, 88% (2097/2392) of mothers were able to mention at least one illness preventable by immunisation.

Views about benefits of immunisation

The interviewers first asked the mothers what they believed their neighbours thought about immunising children. Not all the mothers knew what their neighbours' views on this matter were. Some 96%

(2313/2410) of the mothers said their neighbours thought it was worthwhile to immunise children, 1% (23/2410) said their neighbours did not think it worthwhile, and 3% (74/2410) said they did not know what their neighbours thought about it.

Coming to their own views on the question, 99% (2373/2410) of mothers thought it was worthwhile to immunise children, 1% (28/2410) thought it was not worthwhile, and 0.3% (9/2410) did not know if it was worthwhile or not.

Almost all mothers (99%; 2322/2350) who thought it was worthwhile to immunise children cited protection from illness as their reason.

Those few mothers who thought it was *not* worthwhile to immunise children most often said they thought the vaccine would make the child sick or that they did not feel immunisation was necessary (Table 31).

Table 31 Why mothers felt immunisation was not worthwhile

Reasons	% mothers
Child gets sick from vaccine	58
Feel it is not necessary	21
Immunisation has no effect	4
Child may die	4
No practice in family	9
Limbs stop working	4
N	22

Views about adverse effects of immunisation

Parents might avoid immunising their children because of fear of adverse effects, justified or not. In fact, very few mothers could mention any adverse effects of immunisation that they knew of.

Only 3% (71/2393) of mothers had heard of any adverse effect of immunisation. Most of the effects they mentioned were recognised adverse effects of immunisation, including fever and swelling or pain at the injection site. A few mentioned things that are not recognised adverse effects of immunisation, such as stomach problems and family planning. This last perception is a belief that vaccinations will make children sterile or cause them to have only female children in the future. Overall, 97% (2322/2393) of mothers mentioned no adverse effects of immunisation, 1% (27/2393) mentioned actual side effects, and 2% (41/2393) mentioned misconceptions about adverse effects.

Table 32 Where mothers had heard about adverse effects of immunisations

Source:	% mothers
Family, neighbours	48
Don't know/ myself	35
Written material	5
Doctor/hospital	5
Electronic media (TV, radio)	4
LHV/LHW/Dai	1
Nowhere	3
N	69

The interviewers asked mothers who mentioned they had heard of adverse effects of immunisation where they heard this. Table 32 shows the main sources of information. In many cases, the mothers could not give a specific source for their information. Almost half (33/69) said they had heard of the side effects from their family or neighbours.

Information from the lady health worker

Table 33 Mothers' recall about advice on immunisations given by LHWs

Advice given	% mothers
Nothing	76
Protects against illness	6
Important to immunise	16
Always complete the vaccination course	<1
Get vaccination from birth	<1
N	1535

Among the 65% (1541/2411) of mothers that reported an LHW visited their household, just 24% (348/1535) recalled that the LHW told them anything about immunisations. Those who recalled any information mentioned the LHW told them immunisations were to protect against illness and that it was important to immunise children (Table 33). Among *all* mothers (including those not visited by an LHW), only 14% had been given any advice about immunisations from an LHW.

The recall of mothers contrasts with the information from interviews with LHWs covering some of the sample communities (see below). The LHWs nearly all reported telling the mothers they visited about the benefits and importance of immunising children.

Decisions about immunisation for children

Some 89% (2102/2371) of mothers said they had discussed immunisation of children within the family.

Table 34 Mother's involvement in decisions about immunisation for the child (% children)

	Mother alone	Mother and father	Mother not involved
Daska	77	6	17
Pasroor	80	4	16
Sialkot	61	18	21
Sialkot District	70	11	19

For each child under 60 months we asked the mother who had been involved in deciding about immunisation for that child. For 70% (2385/3345) of the children mothers alone had made the decision, for 11% (341/3345) of children the mother and father decided together, and for 19% (619/3345) of children mothers were not involved in deciding about immunisations. Table 34 shows who was involved in decision making in each tehsil.

Measles immunisation

We collected additional information about measles immunisation specifically and analysed the variables related to the chances of children being immunised against measles. This supplements the analysis of the variables related to the risk of contracting measles (see above), which showed the beneficial effects of measles immunisation on the risk of suffering measles.

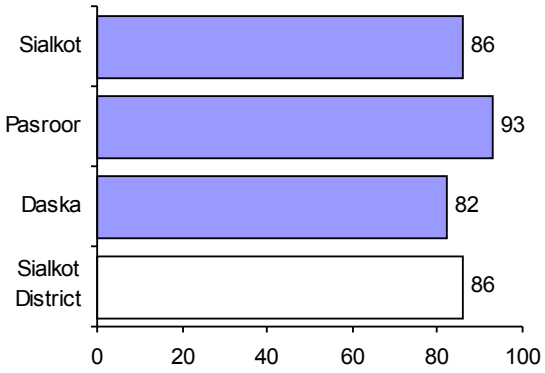


Figure 25 % children (12-23 months) who have received measles vaccine

Frequency of immunisation

As reported above, 86% (590/685) of children aged 12-23 months had received the measles vaccine, usually given at around nine months old. Figure 25 shows the variation in measles immunisation between the three tehsils.

Among children 10-59 months 91% (2544/2802) had received the measles vaccine.

Table 35 Variables potentially associated with the risk of measles in children

- Urban/rural location*
- Tehsil*
- Education of the household head*
- Education of the mother*
- Household vulnerability
- Sex of the child
- Age of the child*
- Mother has heard about immunisations
- Mother knows a vaccine-preventable illness*
- LHW told mother about vaccines*
- Mother thinks it worthwhile to immunise*
- Mother heard about vaccine bad effects*
- Family have discussed immunisations*
- Government immunisation facility within 5Km*
- Private immunisation facility within 1km *
- Private immunisation facility within 5km*
- Any immunisation facility within 5km*
- Vaccination team visits community*

* variables related to risk of measles in univariate analysis

Analysis of receiving measles vaccine

We collected information about a number of variables that might be associated (positively or negatively) with the chances of a child being immunised against measles. These are listed in Table 35. A number of these variables, examined separately, were associated with the chances of a child being immunised against measles. These are marked (*) in Table 35. We then undertook a multivariate analysis to examine the effects of each of these variables, taking into account the effects of the others. The model from the multivariate analysis is shown in Table 36.

Age of child

Younger children (10-36 months) were less likely to have been immunised than older children (37-59 months)[12]. This may indicate that some children are vaccinated against measles at well above the scheduled age for the vaccine of 9 months.

Table 36 Model of effects of variables on the chance of having measles vaccine

	Crude OR	Wt OR	95% CI Wt OR
Younger children	0.42	0.41	0.30-0.56
Educated mother	2.32	2.31	1.73-3.08
LHW vaccine info	1.79	1.79	1.12-2.87
Mother thinks imms worthwhile	21.27	12.66	6.93-23.13
Mother no heard any vaccine bad effects	3.19	3.16	1.59-6.29
Immunisations discussed with family	2.25	1.83	1.23-2.74
Immunisation facility within 5 km	2.63	2.47	1.83-3.32

OR=Odds Ratio, a measure of relative risk

Education of the mother

dren 10-36 months old had measles vaccine compared with 1161/1235

Children whose mothers had some formal education were more than twice as likely to have had measles vaccine as children whose mothers had no education[13].

Information from LHW
Children whose mothers had been visited by an LHW and who recalled being told about immunisations were twice more likely to have had measles vaccine than children whose mothers had not received such information from an LHW[14].

Mother thinks immunisation is worthwhile
Not surprisingly, when mothers thought immunisation was worthwhile, children were more than twelve times more likely to be immunised than if mothers thought immunisation was not worthwhile or they did not know[15].

Hearing about vaccine adverse effects
Children whose mothers had heard nothing about vaccine adverse effects were more than three times more likely to be immunised against measles than children whose mothers heard something about bad effects of vaccines[16].

Discussion in the family about immunisations
Children whose families had discussed about immunisation were more likely to have had measles vaccine than children whose families had not discussed immunisation[17].

Distance to immunisation facility
Children from communities within 5 Km of a government immunisation facility were more than twice as likely to have had measles vaccine as children from communities further from an immunisation facility[18].

[13] Weighted OR 2.31, 95% CI 1.73-3.08, 1571/1673 children whose mother had some education had measles vaccine compared with 965/1117 whose mother had no education

[14] Weighted OR 1.79, 95%CI 1.12-2.87, 404/426 children whose mothers recalled information about immunisations from an LHW had measles vaccine compared with 2132/2365 children whose mothers had not received such information

[15] Weighted OR 12.66, 95% CI 6.93-23.13, 2526/2755 children whose mothers thought vaccination was worthwhile had measles vaccine compared with 16/45 children whose mothers did not think this

[16] Weighted OR 3.16, 95%CI 1.59-6.29, 2464/2701 children, whose mothers heard nothing about vaccine bad effects, had measles vaccine compared with 63/81 children whose mothers heard something about vaccine bad effects

[17] Weighted OR 1.83, 95% CI 1.23-2.74, 2237/2440 children whose family discussed immunisation had measles vaccine compared with 264/314 whose family did not discuss

[18] Weighted OR 2.47, 95% CI 1.83-3.32, 1844/1998 children from communities within 5Km of a government immunization facility had measles vaccine compared with 492/587 from communities further from a facility

Table 37 Potential gains in increasing measles immunisation

Intervention	Proportion requiring intervention (%)	Weighted risk difference	95% CI weighted risk difference	Weighted gain per 1000 children
Ensure LHWs tell mothers about immunisations	83.9	0.029	0.005-0.052	24
Educate mothers about immunisation benefits	2	0.858	0.654-1.061	17
Dispel myths about adverse effects of vaccine	3	0.551	0.221-0.880	17
Encourage families to discuss immunisation	11.4	0.072	0.024-0.120	8
Immunisation facility within 5km all communities	22.7	0.103	0.069-0.137	23

Proportion requiring intervention means those who do not currently have the favourable condition, eg % children whose mothers do not believe vaccination is worthwhile

Potential population gains in measles immunisation

We can estimate the number of additional children who could be vaccinated as a result of different interventions.

The model of the potential population gains in measles immunisation is shown in Table 37. From this table, we can see that if all mothers where informed by an LHW about immunisations, this could have the biggest impact and could increase the number of children who receive measles vaccine by 24 per thousand.

Useful gains could also be made by educating mothers about the benefits of immunisation (17 per thousand additional children immunised) and dispelling myths about adverse effects (17 per thousand additional children immunised). Both these interventions could perhaps be achieved by a visiting LHW, as well as by using other people and modalities to reach the mothers with information. At the same time, families could be encouraged to discuss immunisations (8 per thousand additional children immunised).

Ensuring a government immunisation facility within five kilometres of every community could achieve an additional 23 children per thousand immunised but it could be an expensive option.

Lady health workers

The data collection teams interviewed 41 LHWs identified as visiting the sample communities, to collect information about their work, knowledge and views about childhood diarrhoea, ARI, measles, and immunisation.

Training

All of the LHWs interviewed had received some initial training to work as an LHW and the majority of them (36/41) had received additional training after this. For 35/41 LHWs this additional training had been within the last year.

Work load

Near half the LHWs (19/41) covered more than 150 households in their catchment area. All (41/41) said they visited each household at least once a month.

Some 6/41 of the LHWs reported having difficulty visiting the households in their catchment area and their suggestions for helping them to get to the households included to increase community support (7/41) and to have more medicines and equipment available (2/41).

Supervision

Some 15/41 of the LHWs reported they were visited by a supervisor once a month or less frequently , 25/41 reported they were visited more than once a month, and only one (1/41) reported she was never visited by a supervisor.

Knowledge and attitudes about immunisation

All the LHWs could correctly identify at least one illness prevented by immunisation. About a fourth of them (11/41) had heard something about adverse effects of immunisation. Of those who had heard about adverse effects 9/11 mentioned actual side effects and 2/11 mentioned misconceptions about side effects. The LHWs' sources of information about adverse effects of immunisation are shown in Table 38.

Table 38 Where LHWs heard about adverse effects of immunisation

	No of LHWs
Family, neighbours, friends	8/11
Doctor/health worker	1/11
During training	211

Most LHWs said they provided their clients (mothers) with information about the importance and benefits of

immunisation (38/41), 3/41 said they told mothers about the scheduling of immunisations and one LHW said nothing. This reported passing on of information to mothers was not reflected in interviews with mothers visited by LHWs, few of whom could recall the LHW telling them anything about immunisations.

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LHWs most commonly (19/41) gave "carelessness" as the reason for children in their communities not being immunised. They also mentioned lack of awareness (13/41) and fear of side effects (7/41). Other reasons they cited are shown in Table 39.

Table 39 Why children are not always immunised: LHW views

Reason	No. responses
Carelessness	19
Lack of awareness	13
Fear of side effects	7
Family problem/migration	2
Facility too far	2
Don't have time/no one to take	2
Wait for the mobile team/ team doesn't come	1

The most common suggestion from the LHWs to ensure that all children got immunised was to provide information and raise awareness about the issue (29/41). Other suggestions are shown in Table 40.

Table 40 Suggestions of LHWs to ensure all children are immunised

Suggestion	No. responses
Give information/ increase awareness	29
Mobile teams	14
Facility nearby/transport	6
More staff/vaccinators/train LHWs	1
Ensure vaccine availability/generator/electricity	1

Knowledge and attitudes about diarrhoea

Virtually all the LHWs (40/41) could correctly state at least one cause of childhood diarrhoea. Most (39/41) said a child should be given the same or more food and 31/41 said a child should be given more fluids during an episode of diarrhoea.

Most of the LHWs (39/41) reported they gave advice to mothers and families about preventing and treating childhood diarrhoea (Tables 41 and 42). Most (37/41) reported they gave advice about good hygiene practices and cleanliness to prevent diarrhoea and all of them (41/41) about giving more fluids and ORS to treat diarrhoea. This is in contrast to the reports from mothers visited by LHWs (see above), few of whom could recall the LHW telling them anything about diarrhoea prevention or management.

Table 41 Advice reportedly given by LHWs about diarrhoea prevention

Advice	No of responses
Good hygiene and cleanliness	37
Good nutrition	6
Give more fluids/ ORS	2
No advice/don't know	2

However, when directly asked, most of the LHWs (26/41) said children with diarrhoea *should* be given anti-diarrhoeal drugs, although these can in fact be dangerous in young children. They presumably pass on this misconception to the mothers they visit.

Table 42 Advice reportedly given by LHWs about diarrhoea treatment

Reason	No of responses
Give more fluids/ ORS	41
Contact doctor	11
Good nutrition	10
Hygiene/cleanliness	5

Knowledge and attitudes of LHWs about ARI

Nearly all the LHWs (38/41) could mention some correct advice about recognising ARI in children.

Most of the LHWs reported that they advised mothers to treat a child with ARI by giving medicines (32/41) or taking the child to a doctor (25/41) (Table 43)

Table 43 Advice reportedly given by LHWs about ARI treatment

Advice	No of responses
Give medicines	32
Take to doctor or contact doctor	25
Protect from cold	6
Contact a doctor	3
Feed eggs and honey/hot foods	1

Again, the report from the LHWs is in contrast to the information from mothers visited by LHWs, few of whom could recall the LHW telling them anything about recognition or treatment of ARI.

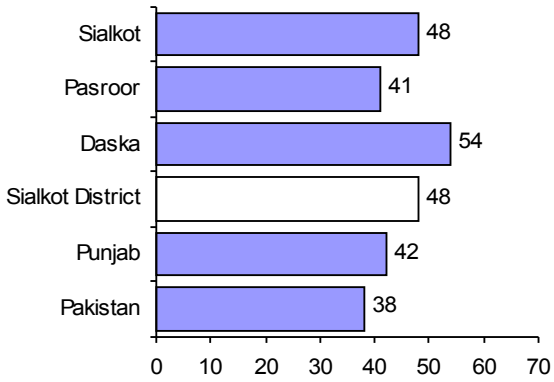

Figure 26 % households satisfied with roads

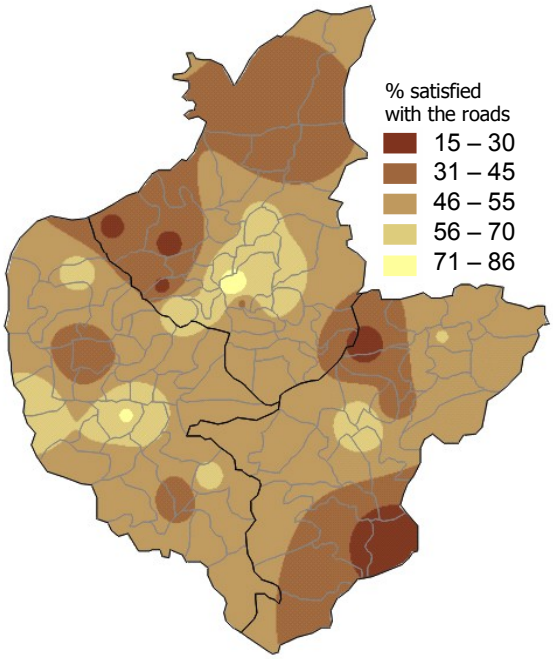

Figure 27 % households satisfied with the roads

Table 44. % households reporting access to roads and public transport

	Roads	Public transport
Sialkot	99	100
Pasroor	>99	100
Daska	>99	100
District Sialkot	99	100
Punjab	85	95
Pakistan	92	93

Public satisfaction with basic services

In a general section of the household interview we asked households about their satisfaction with a range of basic public services provided by the government. In some cases, household respondents said that they had no such service available to them. This same information was also collected as part of the 2004/05 national social audit, so comparison with national and provincial figures is possible.

As mentioned in the report of the national social audit, isolated satisfaction ratings of public services must be interpreted with caution, as they may be influenced by many factors other than the quality of a service. However, they do provide some guide to how citizens view the public services supposed to be available to them. It can be useful to track satisfaction ratings over time, but again care must be taken not to over-interpret changes, especially small changes, which may even be due to chance. In the focus districts, we have the opportunity to compare satisfaction with a range of public services in different parts of the district.

Roads

Across the district, 48% (1096/2260) were satisfied with the roads in their area. Figure 26 includes a comparison with the findings about satisfaction with roads at national and provincial levels.

The map in Figure 27 shows the variation across the district in household satisfaction with roads.

Almost all the households (99%; 2245/2260) across the district considered they had access to roads in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 44.

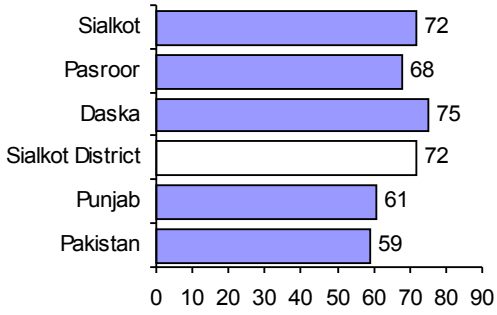

Figure 28 % households satisfied with public transport

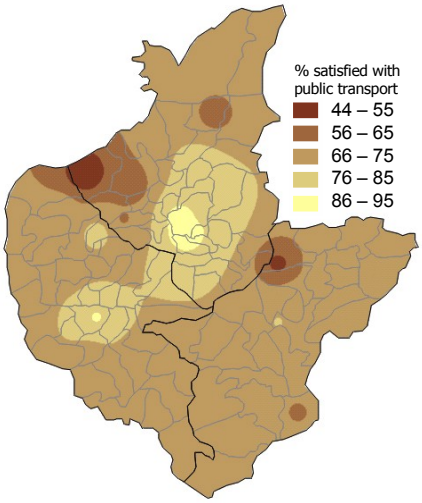

Figure 29 % households satisfied with public transport

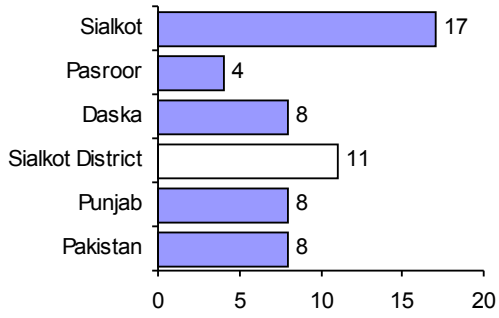

Figure 30 % households satisfied with garbage disposal

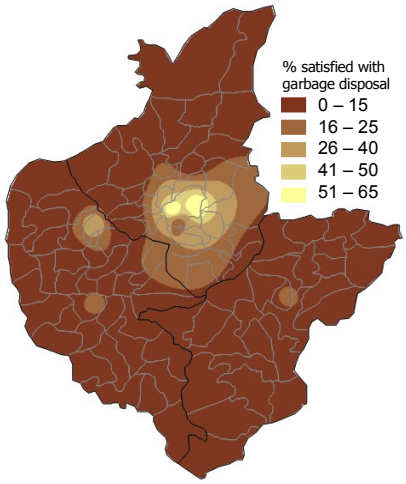

Figure 31 % households satisfied with garbage disposal

Public transport

Across the district, 72% (1635/2261) were satisfied with the public transport in their area. Figure 28 includes a comparison with the findings about satisfaction with public transport at national and provincial levels.

The map in Figure 29 shows the variation across the district in the proportion of households satisfied with public transport.

Almost all (2259/2261) of households across the district considered they had access to public transport in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 44.

Government garbage disposal

Across the district, only 11% (245/2268) of households were satisfied with the government garbage disposal in their community. Figure 30 includes a comparison with the findings about satisfaction with garbage disposal at national and provincial levels. Satisfaction with garbage disposal services in Sialkot district, except in Pasroor where is low, is higher than in Punjab as a province and in Pakistan overall.

The map in Figure 31 shows the variation across the district in household satisfaction with government garbage disposal services. Satisfaction is confined to the Sialkot tehsil urban area.

Some 28% (632/2268) of households across the district considered they had access to garbage disposal in their community. This is shown by tehsil and in comparison with national and provincial figures in Table 45.

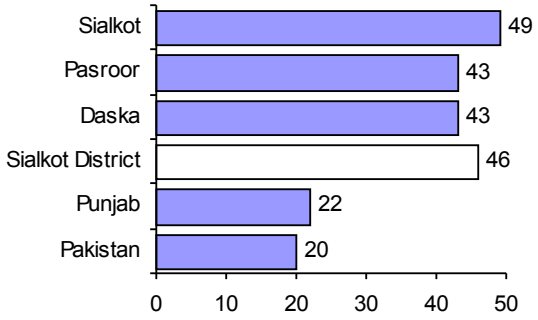

Figure 32 % households satisfied with sewerage services

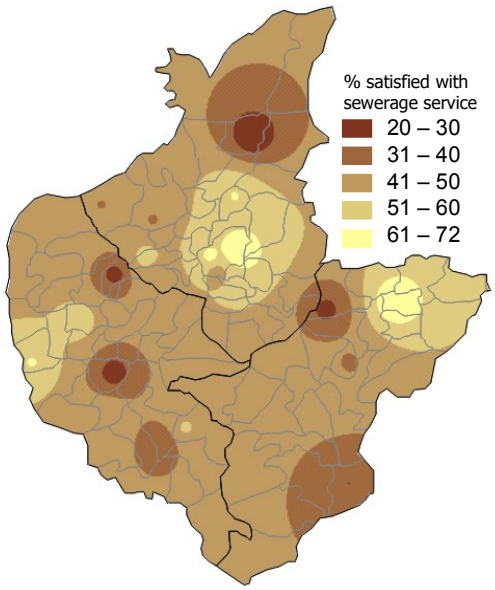

Figure 33 % households satisfied with sewerage services

Table 45. % households reporting access to garbage, sewerage, and water services

	Garbage	Sewerage	Water
Sialkot	35	98	44
Pasroor	19	100	19
Daska	25	100	23
Sialkot District	28	99	27
Punjab	72	70	34
Pakistan	64	53	44

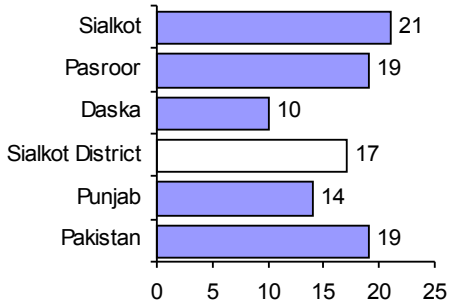

Figure 34 % households satisfied with government water supply

Government sewerage services

Across the district, 46% (1034/2266) of households were satisfied with the government sewerage services in their community. Figure 32 includes a comparison with the findings about satisfaction with sewerage services at national and provincial levels. The overall satisfaction with government sewerage services is much higher in Sialkot than across Punjab or nationally.

Figu

The map in Figure 33 shows the variation across the district in household satisfaction with government sewerage services.

Almost all households (99%; 2240/2266) across the district considered they had access to sewerage services in their community. This is shown by tehsil and in comparison with national and provincial figures in Table 45.

Government water supply

Across the district, only 17% (370/2267) were satisfied with the government water supply in their area. Figure 34 includes a comparison with the findings about satisfaction with government water supply at national and provincial levels. Household satisfaction with government water supply in Sialkot District was a bit higher than for Punjab province and, although a bit lower, similar to Pakistan as a whole.

The map in Figure 35 shows the variation across the district in the proportion of households satisfied with the government water supply. Satisfaction with the government water supply is higher in Sialkot tehsil.

Some 27% (605/2267) of households across the district considered they had access to a government water supply in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 45. Most households make use of a private source of underground water, for example through a household pump.

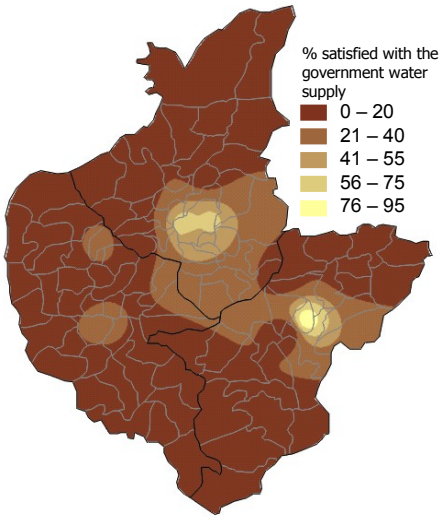

Figure 35 % households satisfied with government water supply

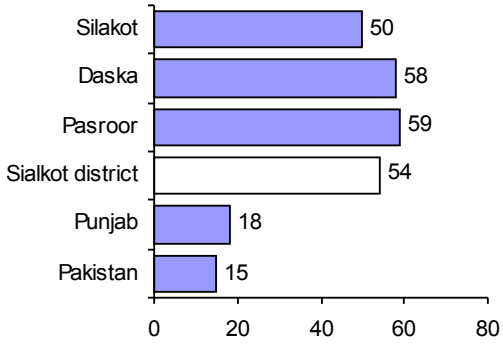

Figure 36 % households satisfied with agriculture services

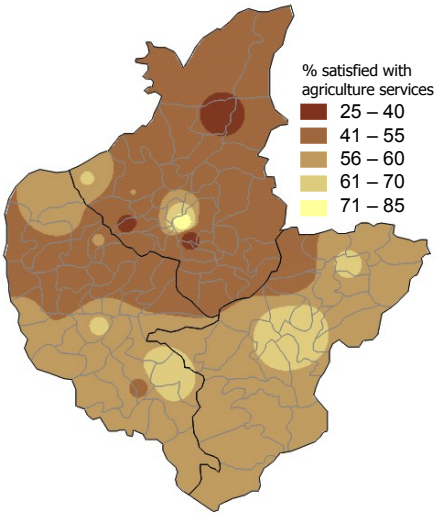

Figure 37 % households satisfied with agriculture services

Table 46. % households reporting access to agriculture, education and health services

	Agriculture	Education	Health
Sialkot	77	100	96
Pasroor	92	99	100
Daska	96	100	99
Sialkot District	86	99	98
Punjab	56	96	81
Pakistan	49	96	78

Agriculture services

Across the district, 54% (827/1512) of households were satisfied with the agriculture services in their area. Figure 36 includes a comparison with the findings about satisfaction with agriculture services at national and provincial levels. The satisfaction with agriculture services in Sialkot District is considerably higher than in Punjab province or in Pakistan as a whole. This is partly because of the higher access to agriculture services in this district (see below).

The map in Figure 37 shows the variation across the district in the proportion of households satisfied with government agriculture services.

Some 86% (1313/1512) of households across the district considered they had access to agriculture services in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 46.

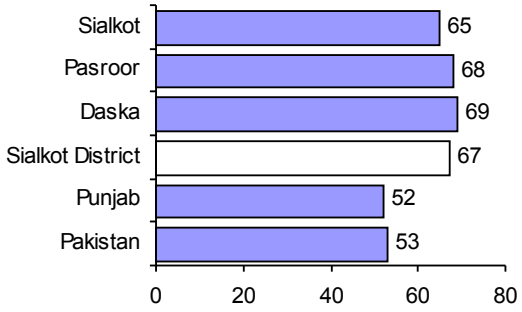

Figure 38 % households satisfied with government education services

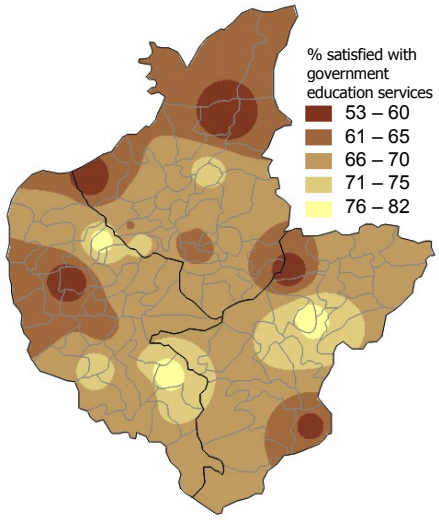

Figure 39 % households satisfied with government education services

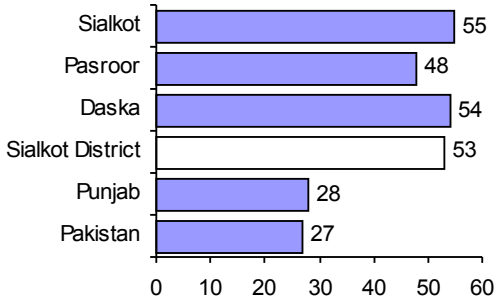

Figure 40 % households satisfied with govt health services

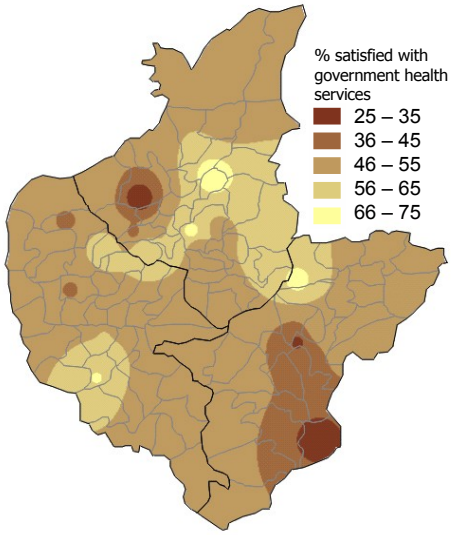

Figure 41 % households satisfied with govt health services

Education

Across the district, 67% (1507/2250) of households were satisfied with the government education service in their area. Figure 38 includes a comparison with the findings about satisfaction with the government education service at national and provincial levels. The satisfaction with government education services in Sialkot compares quite favourably with the figures for Punjab province and for Pakistan as a whole.

The map in Figure 39 shows the variation across the district in proportion of households satisfied with the government education services in their area.

Virtually all (2247/2250) households across the district considered they had access to a government education service in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 46.

Health

Across the district, 53% (1175/2235) of households were satisfied with the government health services in their area. Figure 40 includes a comparison with the findings about satisfaction with the government health services at national and provincial levels. Again, satisfaction with government health services in Sialkot District compares favourably with the satisfaction across Punjab province and in Pakistan as a whole.

The map in Figure 41 shows the variation across the district in the proportion of households satisfied with the government health services in their area

Most (98%; 2198/2235) households across the district considered they had access to government health services in their area. This is shown by tehsil and in comparison with national and provincial figures in Table 46.

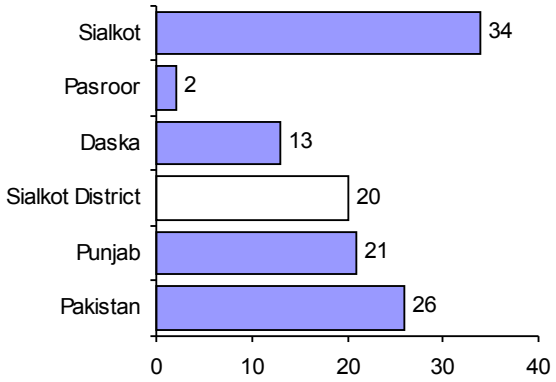

Figure 42 % households satisfied with gas supply

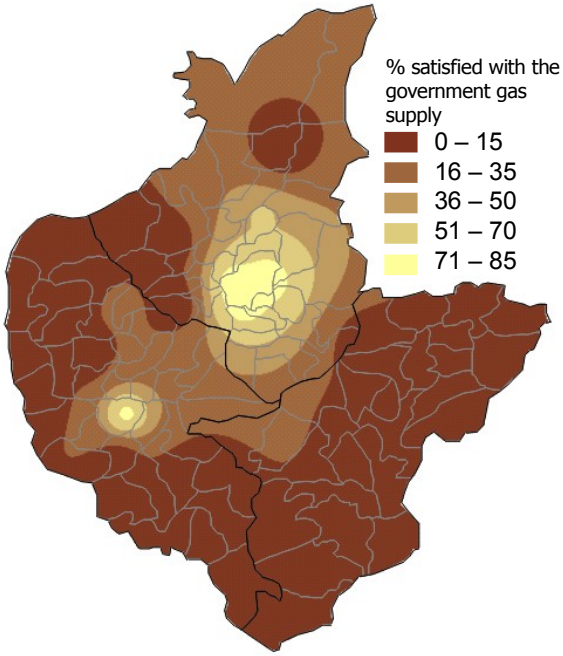

Figure 43 % households satisfied with gas supply

Table 47. % households reporting access to gas and electricity services

	Gas	Electricity
Sialkot	44	100
Pasroor	2	100
Daska	25	100
Sialkot District	30	100
Punjab	25	95
Pakistan	30	93

Gas supply

Across the district, 20% (435/2271) of households were satisfied with the gas supply in their area. Figure 42 includes a comparison with the findings about satisfaction with gas supply at national and provincial levels. The satisfaction with gas supply in Sialkot District was similar to that for Punjab and a little lower than that for Pakistan as a whole. Pasroor tehsil has a very low proportion of households with a gas supply (see also Table 47).

The map in Figure 43 shows the variation across the district in the proportion of households satisfied with the gas supply. Satisfaction is mostly confined to urban areas in Sialkot and Daska tehsils.

Some 29% (630/2271) of households across the district reported they had access to a gas supply. This is shown by tehsil and in comparison with national and provincial figures in Table 48. Pasroor tehsil has almost not access (2%; 11/517) to a gas supply.

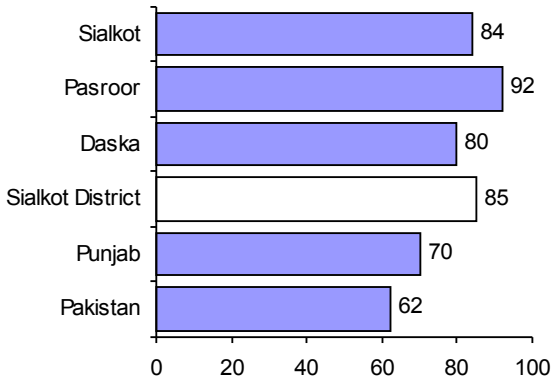

Figure 44 % households satisfied with electricity supply

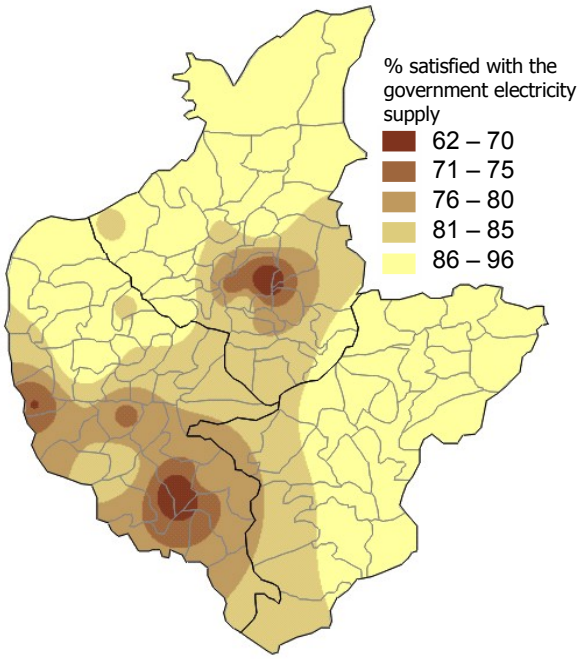

Figure 45 % households satisfied with electricity supply

Electricity supply

Across the district, 85% (1920/2273) of households were satisfied with the electricity supply in their area. Figure 44 includes a comparison with the findings about satisfaction with electricity supply at national and provincial levels. The satisfaction with electricity in Sialkot District is higher than in Punjab province and Pakistan as a whole.

The map in Figure 45 shows the variation across the district in the proportion of households satisfied with the government electricity supply.

All of the households (2273) across the district reported they had an electricity supply (Table 47).

Commentary

This report presents the main findings of the social audit in Sialkot district. It is by no means the end of the process. It will hopefully be a useful reference. But the main work of disseminating the findings and making use of them to support evidence-based planning is only just beginning. Over the coming months the social audit findings will be presented and discussed in many settings within the district, both within and outside government.

During this process many people will no doubt examine the findings closely and look beyond what is included in this report, relating the findings to what they know about the district and tehsil settings and looking for feasible ways to improve outcomes. Some findings that bear highlighting even at this stage.

Childhood diarrhoea

The rate of diarrhoea – 26% of children under five years old with diarrhoea in the last two weeks – is quite high by international standards. In many studies the quality of drinking water is found to be a factor, with children whose households do not have a protected water source having a higher rate of diarrhoea. In Sialkot District, almost all households have a water source that is classified as 'protected' as it is underground water or piped. So it was not possible to examine the effect of water source protection on the risk of diarrhoea.

Children from households whose members used a latrine had a lower risk of diarrhoea, although but this effect was confined to younger children (0-36 months old).

Coming to treatment of diarrhoea, it is encouraging that most mothers know (and believe) children with diarrhoea should be given extra fluids. There is still work to be done to convince them all and to help them do it in practice. Of concern is the high rate of use of anti-diarrhoea medicines. It is not good practice to use these for young children and it can be dangerous. But many LHWs believed in the use of anti-diarrhoea medicines for children and other health practitioners may also be prescribing them.

The most popular source of treatment for children with diarrhoea is unqualified practitioners (42%), while only

4% of children with diarrhoea were taken to a government facility. There is evidence to suggest that the treatment at government facilities might be more appropriate: they gave more ORS than either private or unqualified practitioners. Yet in most cases children are being treated by unregulated unqualified practitioners.

Childhood acute respiratory infections (ARI)

Evidence from the literature suggests that smoke in the household increases the risk of ARI in children but we were unable to demonstrate this in Sialkot District.

Children with ARI do need medical attention so it was encouraging to see that only 14% were not taken anywhere for treatment. Once again, the usual choice of parents was unqualified practitioners, and only 5% of children with ARI were taken to a government facility for treatment. The easy access to unqualified practitioners and the concerns about lack of medicines in government facilities seem to be factors in the decision of where to take children for treatment.

Childhood measles

Measles is quite common in Sialkot district: 17% of children aged 1-59 months old have had measles, even excluding those cases under 10 months old (which may not be measles). Taking other factors into account, we were able to show that children who were not immunised had nearly twice the risk of measles compared with immunised children. This recent information specifically from Sialkot district is useful to give to parents deciding whether to immunise their children. We were also able to show that an extra11 per thousand children in Sialkot district could be protected from measles if all children were immunised. Actually, this could be an underestimate because once nearly all children are immunised there is a "herd immunity" effect further reducing the risk of measles, even in non-immunised children.

Childhood immunisations

Sialkot is achieving high rates of immunisation already. Nearly all (95%) children receive BCG at birth, and there is little fall off in the following months, so that 88% of children receive the full course of DPT injections, and 86% receive measles vaccine.

Some of the discussions held with parents in focus groups help to explain reasons why not all children are immunised and could be useful inputs into an advocacy campaign, together with the evidence about the beneficial effects of measles immunisation. The analysis of variables related to the chances of a child being immunised against measles offers a number of options for interventions that could help to increase still further the number of immunised children. Which of these options might be feasible and appropriate in Sialkot will be a subject for discussion over the coming months. Some interventions would be much cheaper than others.

The role of lady health workers (LHWs)

The coverage of mothers by LHWs in Sialkot district is quite good: 65% of mothers reported they were visited by an LHW. However, it is striking that most mothers visited by an LHW did not recall being told anything about prevention or treatment of diarrhoea in children, recognition and treatment of ARIs in children, or immunisations. On the other hand, nearly all the LHWs we interviewed said they did tell mothers about these things. The reasons for this contrast need to be explored and perhaps LHWs need to be equipped with different methods of getting over information to mothers.

Satisfaction with a range of government services

We asked households a general question about their satisfaction (and access) to a range of basic services, provided from different levels of government. While we caution against over-interpretation of these isolated satisfaction ratings, they do provide a general guide. Sialkot district is doing well for public satisfaction with all the services, except gas supply, in comparison with Punjab as a whole. These ratings can provide an ongoing feedback from citizens, but bearing in mind their limitations.

Annexes

1. Members of Sialkot district social audit steering group
2. Members of Sialkot district social audit sub-technical group
3. Terms of reference of social audit national core group
4. CIET methods
5. Main indicators from household interviews, by tehsil
6. Main indicators from community profiles and LHW interviews
7. Main themes from focus group discussions

Annex 1

Members of Sialkot social audit district steering group

1. Mian Naeem Javed, District Nazim (Chairperson)
2. Mr.Tahir Raza Naqvi,DCO(co-chairperson)
3. Mr. Ch. Muhammed Afzal,EDO/CD (secretary)
4. Mr.Akram Javed,EDO(Rew)Sialkot
5. Mr.Rana Farman Ali,EDO(Agri) Sialkot
6. Dr.Capt.(R) Khalid Mahmood,EDO(Health)
7. Mr.Syed Zaheer-ul-Hasnain,EDO(Works) Sialkot
8. Mr.Rana Azhar Ali Khan,EDO(F&P) Sialkot
9. Dr. Saif Ullah Cheema EDO(Edu)
10. Mr.Shahid Kaiser Bajwa,DO/CD(focal person)
11. Mr. Shoukat Javaid Siddiqui,DO/SW (co-focal person)
12. Pirzada Saeed Ahmad Shah, Chairman District Bait-ul-mal
13. Prof. Muhammad Ahmad Chairman Distt.Zakat & Ushar Com.
14. Allama Aqil Ahmad Zaheer,Nzim UC Pasrur No.1
15. Mr.Umar Hayat Bhall,UC Nazim Gojra (Daska)
16. Mr. Ghalam Haider Khadmi,UC Nazim Shahabpura,Skt.
17. Ms. Zahida Ehsan Ghuman,Member Distt. Council Skt
18. Ms. Nasim Akhtar Khawaja, ,Member Distt Council Skt
19. Mr. Farooq Myer,(NGO-Tameer-e-Pakistan)
20. Mr. Manzar (NGO- CSDO/SCC&I)
21. Mr. M.Ijaz Noori (NGO-Council for SW & Human Rights)
22. All DEOs & TMOs in the District Sialkot

Annex 2

Members of Sialkot social audit sub-technical group

1. Dr. Capt.(R) Khalid Mahmood ,EDO (Health) Convener
2. Mr. Shahid Kaiser Bajwa, DO (CD) Secretary
3. TMO (Sialkot)
4. TMO (Pasrur)
5. Allama Aqeel Ahmad Zaheer, Nazim(U C- Pasrur)
6. Malik Saif Ullah, Nazim(U C- Pura Heerian),
7. Ms Nasim Akhtar Khawaja(Chair person DPS&PCC)
8. Ms.Zahida Ehsan Ghuman (Lady Member D/Council)
9. Mr. Manzar (NGO- CSDO)
10. Mr.Ijaz Noori (NGO-Council for SW & Human Rights).

Annex 3: Terms of reference of social audit national core group

Membership

The membership will include:

- From each focus district: the zila nazim or representative and the DCO or district focal person for the social audit
- The social audit focal point from each provincial department of Local Government and Rural Development
- The CIET district coordinator from each focus district, CIET provincial coordinators and national coordinator, and representation from the CIET liaison office in Islamabad
- A representative from NRB
- Other members as may be co-opted for specific purposes from time to time

The group will be chaired by one of the members from the focus districts, to be elected by the core group members. The group members will elect a chair every six months. CIET will provide the secretariat for the group.

Purposes of the group

The intention of the national core group is to share experiences of the district social audit scheme between the districts, identifying what has worked especially well, so that a tool-box for district social audit schemes in other districts can be developed.

The group will:

- develop means of *horizontal connectivity*: methods of sharing learning between the participating districts, both in terms of how best to apply the social audit effectively and in terms of findings and action plans developed as a result. These might include email listserves, a newsletter, shared reports, and meetings.
- explore means of increasing *vertical connectivity*: identifying common issues arising from the social audit to bring to the attention of the NRB; developing the role of the provincial LGRD departments in supporting the district social audit schemes; and findings ways to involve sub-district governments and civil society in social audit.
- provide a forum for discussing and agreeing matters of common interest, such as the focus of each social audit cycle and methods of publicizing the findings
- act as a point of reference for other districts that wish to develop district social audit schemes

Meetings

Meetings will be held six monthly. The venue for each meeting will be one of the participating districts, to be agreed in the preceding meeting.

The Minutes of the meetings will be circulated to the members and to the Chief Secretary, the head of the Planning and Development, and the head of the Local Government department in each province.

In between physical meetings, matters of interest or importance to the Group will be circulated for comment and discussion, mostly electronically.

Annex 4: CIET methods

Rooted in modern epidemiology and participatory research techniques, CIET methods have been applied in health[19], education[20], water and sanitation[21], land mines[22], economic sanctions[23], prevention of sexual violence[24] and the impact of structural adjustment measures on the vulnerable. The method has been used to measure impact, coverage and cost in the fields of environment[25], urban transport[26], agricultural extension[27] and judiciary[28]. It has proved useful for community-designed strategies to combat corruption in the public services in several countries[2930]. CIET processes have been established in over 40 countries during the last decade.

A representative sample of communities is selected to represent conditions across the entire country. In these sentinel communities, *all* public services to be included in the audit are reviewed. This allows for conclusions not just on the performance of each department, but on the performance of the services taken together. In each sentinel community, several types of interaction are developed with the community, including a service delivery household survey. The fact that the public services are reviewed in the same sentinel communities as the household survey and focus groups means that these different types of information – community and service, quantitative and qualitative – can be combined economically and rapidly.

There are several specific steps in the social audit that examine and strengthen community participation:
- the sample is carefully chosen to cover all types of community; information they provide includes their experience with services, their satisfaction and willingness to pay;
- community members and service providers participate in the fact finding;
- community members and service providers participate in analysis of the evidence, adding their experience and ideas to formulate local solutions;
- the workshopping process allows both one-to-one interaction and group discussion of the evidence and the ways forward; and
- the reiterative nature of the process helps to build community capacities and confidence.

[19] Cockcroft A. Performance and Perceptions of Health and Agriculture Services in Uganda. CIETinternational/World Bank/UNICEF/CIDA: Washington, D.C., December 1996.

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[30] Cockcroft A, Legorreta J. National Integrity Survey, Uganda. Inspectorate of Government, Uganda & CIETinternational, August 1998.

Taken together with hard evidence of what needs to change and how it should be changed, this participation can produce a radical change in public services, increasing accountability and providing the public with value for money.

In addition to a detailed review of public services, and interviews with service providers, community-based social audits collect information on users and non-users of a service from the standpoint of the community. A community-based audit compares users and non users in the same community, and it can compare entire communities that benefit form a service with entire communities that do not benefit. This is a strong analytical position for understanding programme performance. Since it places community dynamics at the centre of the audit, it is very easy to answer questions about who the programme leaves out and why they are left out, something that service-based approaches cannot do easily. It also allows for evaluation of 'knock-on' or secondary effects, for example, when some women in a community are exposed to programme content and they relay the benefits to others in some way or another.

Analysis

The most basic level of analysis is simply a description of the levels of the different indicators of service performance. However, this does not in itself contribute to changing the situation. Formal epidemiological analysis probes behind the indicators to reach a deeper understanding of what is happening and how it be changed to improve outcomes for the well-being of the population in question.

The CIET community-based cross-design methods focus principally on what is working (the proof that something is not working requires considerably bigger sample sizes). Even when a relationship is found between a particular intervention or service and a positive outcome, in order to be sure it is the intervention that produces the positive outcome, it is necessary to exclude other possible factors as explanations of the outcome. This leads to the development of several higher-level indicators, each with a purpose in planning.

Modern epidemiological methods, for example the Mantel-Haenszel[31] procedure and the Mantel-Extension[32] test for trend, widely used for studying causes in the medical sphere, have been adapted to look behind the indicators in management in other sectors, including justice, transport, environment, customs services, water, sanitation, agriculture, food security and education. These techniques allow detailed analysis of factors that contribute to impact at national and sub-national levels. They can be used in analysis of data from social audits.

GIS component: maps for planning

CIET mapping techniques are an important means of displaying findings for planners and policy makers. The CIETmap geographic information process is designed for communication and modelling of epidemiological data for planning.[33] It represents the spatial variations of

[31]Mantel N, Haenszel W. Statistical aspects of the analysis of data from retrospective studies of disease. *J Natl Cancer Inst* 1959;22:719_748.

[32]Mantel N. Chi_square tests with one degree of freedom: extensions of the Mantel Haenszel procedure. *J Amer Stat Assoc* 1963;58:690_700.

[33] Andersson N., Mitchell S. CIETmap: free GIS and epidemiology software from the CIET group, helping to build the community voice into planning. World Congress of Epidemiology, Montreal, Canada, 19 August, 2002.

indicators but it can also model the effects of interventions, programme changes, and time-series data.

Sample data collected in the field are linked to a set of sentinel sites on the map and interpolated to create a raster surface of the study area. An adjustment is made to the interpolation in order to account for the population weighting of the sites. This transforms the map into one which represents proportion of the population rather than simply geographic area. A colour palette is then applied to show the gradient changes between classes of data, with darker colours representing high values and lighter colours representing low values.

CIET raster maps are interpreted much like a standard weather map where regional trends are more accurate than the exact location of any contour gradient. However, since they are population weighted, if 30% of the map falls within a certain class range then 30% of the population is in that range.

CIETmaps can be used to measure community participation and coverage of services in different sectors including social welfare, health, education, sports, art and culture. Each level of CIET indicators can be displayed on the maps in order to show access to services, the current effect of services on the community, and the possible effects of any programme change or reallocation.

For example, a level 0 ‘coverage’ map can show which households have access to, say, government health services and which do not. This can be helpful in determining where the gaps of services occur based upon community reported needs.

This map can then be compared with the coverage with roads of different types in different areas. Satisfaction is partly a function of expectations. The level 0 maps can demonstrate regional variations of satisfaction or access to services which may be important to consider for any reallocation or reform of services.

CIETmaps can then be used to determine how any projected road construction might change overall satisfaction with this service. These ‘gains’ can be clearly modelled on the maps through a ‘morph’ series. The morph series is so named due to the visible change that occurs in the indicator on the map, much like a series of steps in an animation. For example, the morph series may show a significant increase in user satisfaction if ‘Reform A’ was implemented. The Morph series not only shows how much of an effect there may be, but also where the effect takes place. Morph series maps can also be used to compare interventions, such as the effect of Reform A vs. Reform B, or the effect of A and B together.

Annex 5: Main indicators from household interviews

Table 1. General household indicators by tehsil

Indicator	DISTRICT % wt (unwt) 95% CI	Based on	DASKA % unwt 95% CI	Based on	PASROOR % unwt 95% CI	Based on	SIALKOT % unwt 95% CI	Based on
Household demographic and socio-economic characteristics								
Total households interviewed		2275		820		518		937
Total population covered		17855		6508		4087		7260
Mean household size	7.8 7.71-7.99	2274	7.9 7.7 - 9.2	820	7.8 7.4 - 9.0	518	7.7 7.3 - 8.4	936
Households where a women responded	89.47(89.62) 88.19 - 90.76	2274	89.63 87.49 - 91.78	820	94.02 91.88 - 96.15	518	87.18 84.98 - 89.37	936
Households with a male head	88.05(88.22) 86.69 - 89.40	2267	89.46 87.29-91.63	816	89.96 87.28 - 92.65	518	86.17 83.91-88.44	933
Household head with any education	61.83(61.78) 59.81 - 63.85	2266	61.66 58.27 - 65.05	819	60.74 56.43 - 65.04	517	62.47 59.31 - 65.64	930
Houses with poor roof construction	33.19(34.61) 31.23 - 35.15	2265	48.78 45.29 - 52.26	818	37.14 32.88 - 41.40	517	20.75 18.09 - 23.41	930
Houses with >4 people/room	27.12(27.08) 25.27 - 28.97	2267	27.26 24.15 - 30.37	818	25.48 21.63 - 29.33	518	27.82 24.89 - 30.75	931
Main breadwinner unemployed or unskilled	35.22(35.19) 33.23 - 37.21	2262	35.09 31.75 - 38.43	815	34.69 30.49 - 38.89	516	35.55 32.42 - 38.68	931
Vulnerable households	25.25(25.89) 23.43 - 27.07	2248	32.43 29.15 - 35.71	811	26.6 22.69 - 30.52	515	19.74 17.12 - 22.36	922
Very vulnerable households	4.77(4.89) 3.86 - 5.67	2248	6.04 4.34 - 7.74	811	5.44 3.38 - 7.49	515	3.58 2.33 - 4.83	922
General opinion about services								
Roads		*n=2260*		*n=817*		*n=517*		*n=926*
Satisfied	48.25(48.5) 46.16 - 50.33	1096	53.73 50.25 - 57.21	439	41.2 36.86 - 45.54	213	47.95 44.68 - 51.22	444
Not satisfied	51.04(50.84) 48.95 - 53.12	1149	46.02 42.54 - 49.50	376	58.61 54.26 - 62.95	303	50.76 47.48 - 54.03	470
No service	0.72(0.66) 0.35 - 1.09	15	0.24 -0.16 - 0.64	2	0.19 -0.28 - 0.67	1	1.3 0.51 - 2.08	12
Public transport		*n=2261*		*n=817*		*n=514*		*n=930*
Satisfied	72.21(72.31) 70.35 - 74.08	1635	74.79 71.75 - 77.82	611	68.29 64.17 - 72.41	351	72.37 69.44 - 75.29	673
Not satisfied	27.64(27.55) 25.78 - 29.51	623	25.21 22.18 - 28.25	206	31.52 27.40 - 35.63	162	27.42 24.50 - 30.34	255
No service	0.14(0.13) -0.03 - 0.32	3	0	0	0.19 -0.28 - 0.67	1	0.22 -0.14 - 0.57	2
Sewerage service		*n=2266*		*n=816*		*n=517*		*n=933*
Satisfied	45.94(45.63) 43.87 - 48.01	1034	43.38 39.92 - 46.84	354	42.75 38.39 - 47.11	221	49.2 45.93 - 52.46	459

Indicator	DISTRICT % wt (unwt) 95% CI	Based on	DASKA % unwt 95% CI	Based on	PASROOR % unwt 95% CI	Based on	SIALKOT % unwt 95% CI	Based on
Not satisfied	52.81(53.22) 50.74 - 54.89	1206	56.25 52.78 - 59.72	459	56.87 52.50 - 61.23	294	48.55 45.29 - 51.81	453
No service	1.25(1.15) 0.77 - 1.73	26	0.37 -0.11 - 0.84	3	0.39 -0.24 - 1.02	2	2.25 1.25 - 3.26	21
Garbage service		*n=2268*		*n=820*		*n=518*		*n=930*
Satisfied	11.28(10.8) 9.96 - 12.61	245	8.05 6.13 - 9.97	66	4.25 2.41 - 6.08	22	16.88 14.42 - 19.34	157
Not satisfied	17.13(17.06) 15.55 - 18.70	387	17.32 14.67 - 19.97	142	14.48 11.35 - 17.61	75	18.28 15.74 - 20.82	170
No service	71.59(72.13) 69.71 - 73.47	1636	74.63 71.60 - 77.67	612	81.27 77.82 - 84.73	421	64.84 61.72 - 67.96	603
Government water supply		*n=2267*		*n=818*		*n=518*		*n=931*
Satisfied	16.88(16.32) 15.32 - 18.45	370	9.54 7.46 - 11.61	78	18.73 15.27 - 22.18	97	20.95 18.28 - 23.61	195
Not satisfied	10.4(10.37) 9.12 - 11.68	235	13.45 11.05 - 15.85	110	0.77 -0.08 - 1.62	4	13 10.78 - 15.21	121
No service	72.72(73.31) 70.87 - 74.58	1662	77.02 74.07 - 79.96	630	80.5 76.99 - 84.01	417	66.06 62.96 - 69.15	615
Gas supply		*n=2271*		*n=820*		*n=517*		*n=934*
Satisfied	20.34(19.15) 18.66 - 22.02	435	12.68 10.34 - 15.02	104	1.93 0.65 - 3.22	10	34.37 31.27 - 37.47	321
Not satisfied	8.5(8.59) 7.33 - 9.67	195	12.44 10.12 - 14.76	102	0.19 -0.28 - 0.67	1	9.85 7.89 - 11.81	92
No service	71.16(72.26) 69.27 - 73.04	1641	74.88 71.85 - 77.91	614	97.87 96.53 - 99.21	506	55.78 52.54 - 59.02	521
Electricity supply		*n=2273*		*n=820*		*n=518*		*n=935*
Satisfied	84.65(84.47) 83.14 - 86.15	1920	79.88 77.07 - 82.68	655	92.08 89.66 - 94.51	477	84.28 81.89 - 86.66	788
Not satisfied	15.35(15.53) 13.85 - 16.86	353	20.12 17.32 - 22.93	165	7.92 5.49 - 10.34	41	15.72 13.34 - 18.11	147
No service	0	0	0	0	0	0	0	0
Government health service		*n=2235*		*n=810*		*n=509*		*n=916*
Satisfied	52.65(52.57) 50.55 - 54.74	1175	53.58 50.08 - 57.08	434	47.54 43.11 - 51.98	242	54.48 51.20 - 57.76	499
Not satisfied	45.53(45.77) 43.45 - 47.62	1023	45.93 42.43 - 49.42	372	52.46 48.02 - 56.89	267	41.92 38.67 - 45.17	384
No service	1.82(1.66) 1.24 - 2.40	37	0.49 -0.05 - 1.04	4	0	0	3.6 2.34 - 4.86	33
Government education service		*n=2250*		*n=817*		*n=513*		*n=920*
Satisfied	66.77(66.98) 64.80 - 68.74	1507	68.79 65.55 - 72.03	562	68.03 63.90 - 72.16	349	64.78 61.64 - 67.92	596
Not satisfied	33.1(32.89) 31.13 - 35.07	740	31.21 27.97 - 34.45	255	31.38 27.27 - 35.50	161	35.22 32.08 - 38.36	324

Indicator	DISTRICT % wt (unwt) 95% CI	Based on	DASKA % unwt 95% CI	Based on	PASROOR % unwt 95% CI	Based on	SIALKOT % unwt 95% CI	Based on
No service	0.13(0.13) -0.04 - 0.30	3	0	0	0.58 -0.17 - 1.34	3	0	0
Government agriculture service		*n=1512*		*n=595*		*n=235*		*n=682*
Satisfied	54.23(54.7) 51.69 - 56.78	827	58.32 54.27 - 62.36	347	58.72 52.22 - 65.23	138	50.15 46.32 - 53.97	342
Not satisfied	31.52(32.14) 29.14 - 33.89	486	37.82 33.83 - 41.80	225	34.04 27.77 - 40.31	80	26.54 23.15 - 29.93	181
No service	14.25(13.16) 12.46 - 16.05	199	3.87 2.23 - 5.50	23	7.23 3.71 - 10.76	17	23.31 20.07 - 26.56	159
Household environment and ventilation								
Houses with some arrangement for ventilation	88.17(88.17) 86.81 - 89.52	2248	88.04 85.74 - 90.33	811	88.57 85.72 - 91.41	516	88.06 85.91 - 90.21	921
Kitchen/cooking area separate from main living area	74.03(73.88) 72.21 - 75.86	2274	69.02 65.80 - 72.25	820	83.01 79.68 - 86.34	518	73.08 70.18 - 75.97	936
Kitchen/cooking area separate from sleeping area	85.82(85.84) 84.37 - 87.28	2274	82.93 80.29 - 85.56	820	94.59 92.55 - 96.64	518	83.55 81.12 - 85.98	936
Types of cooking stove used by households		*n= 2269*		*n= 817*		*n=517*		*n=935*
Sui gas stove	24.25(23.23) 22.46 - 26.03	527	19.46 16.69 - 22.24	159	3.29 1.65 - 4.92	17	37.54 34.38 - 40.70	351
Wood stove	27.47(27.59) 25.61 - 29.33	626	30.84 27.62 - 34.07	252	22.05 18.38 - 25.72	114	27.81 24.88 - 30.73	260
Coal stove	0.04(0.04) -0.06 - 0.15	1	0	0	0.19 -0.28 - 0.67	1	0	0
Kerosene stove	0.95(0.93) 0.53 - 1.37	21	0.86 0.16 - 1.55	7	0.39 -0.24 - 1.02	2	1.28 0.51 - 2.06	12
Electric	0.04(0.04) -0.06 - 0.15	1	0	0	0.19 -0.28 - 0.67	1	0	0
Cow dung (Ooplay)	42.38(43.28) 40.32 - 44.43	982	44.8 41.33 - 48.27	366	65.96 61.78 - 70.14	341	29.41 26.44 - 32.39	275
Gas Cylinder	4.87(4.89) 3.96 - 5.78	111	4.04 2.63 - 5.45	33	7.93 5.50 - 10.36	41	3.96 2.65 - 5.26	37
Households using cooking stove that doesn't produce smoke	29.16(28.16) 27.27 - 31.05	2269	23.5 20.53 - 26.47	817	11.41 8.57 - 14.25	517	41.5 38.29 - 44.71	935
Households use some heating system	37.73(36.89) 35.72 - 39.75	2269	36.46 33.11 - 39.82	820	12.93 9.95 - 15.92	518	50.59 47.33 - 53.86	931
Types of heating system used by households		*n=2269*		*n=820*		*n=518*		*n=931*
None	62.27(63.11) 60.25 - 64.28	1432	63.54 60.18 - 66.89	521	87.07 84.08 - 90.05	451	49.41 46.14 - 52.67	460
Sui gas stove	14.48(13.71) 13.01 - 15.95	311	10 7.89 - 12.11	82	1.16 0.14 - 2.18	6	23.95 21.16 - 26.75	223
Wood heater stove	7.73(7.62) 6.61 - 8.85	173	8.17 6.23 - 10.11	67	2.9 1.36 - 4.44	15	9.77 7.81 - 11.74	91
Coal heater stove	8.02(7.89) 6.88 - 9.15	179	6.95 5.15 - 8.75	57	6.76 4.50 - 9.01	35	9.34 7.42 - 11.27	87

Indicator	DISTRICT % wt (unwt) 95% CI	Based on	DASKA % unwt 95% CI	Based on	PASROOR % unwt 95% CI	Based on	SIALKOT % unwt 95% CI	Based on
Kerosene heater stove	0.09(0.09) -0.05 - 0.24	2	0	0	0.19 -0.28 - 0.67	1	0.11 -0.16 - 0.37	1
Electric heater stove	1.28(1.32) 0.79 - 1.76	30	2.07 1.04 - 3.11	17	0.58 -0.17 - 1.33	3	1.07 0.36 - 1.79	10
Cow dung (Ooplay)	0.17(0.18) -0.02 - 0.37	138	9.15 7.11 - 11.18	75	0.97 0.03 - 1.90	5	6.23 4.62 - 7.84	58
Gas Cylinder	62.27(63.11) 60.25 - 64.28	4	0.12 -0.18 - 0.42	1	0.39 -0.24 - 1.02	2	0.11 -0.16 - 0.37	1
Households using heating system that doesn't produce smoke	78.2(78.32) 76.48 - 79.92	2269	75.73 72.74 - 78.73	820	89.19 86.42 - 91.96	518	74.54 71.69 - 77.40	931
Households with someone smoking inside the household	55.68(56.11) 53.62 - 57.75	2267	59.78 56.36 - 63.20	818	58.49 54.15 - 62.83	518	51.56 48.29 - 54.82	931
Household drinking water supply								
Type of water supply		*n=2272*		*n=820*		*n=518*		*n=934*
Piped water	20.48(19.19) 18.80 - 22.16	436	6.34 4.61 - 8.07	52	16.99 13.66 - 20.32	88	31.69 28.65 - 34.73	296
Underground water	79.17(80.5) 77.48 - 80.87	1829	93.66 91.93 - 95.39	768	83.01 79.68 - 86.34	430	67.56 64.50 - 70.61	631
Surface water	0.35(0.31) 0.08 - 0.61	7	0	0	0	0	0.75 0.14 - 1.36	7
Household with water supply within the household	97.92(98.02) 97.31 - 98.53	2272	99.88 99.58 - 100.18	820	95.75 93.92 - 97.59	518	97.64 96.62 - 98.67	934
Water source with in 500m of the households including those within the household	99.64(99.65) 99.37 - 99.91	2262	100 99.94 - 100.06	820	98.4 97.82 - 99.86	516	99.78 99.43 - 100.14	926
Protection of water source								
Households getting their drinking water from a protected source	95.68(96.17) 94.82 - 96.54	2270	100 99.94 - 100.06	820	99.81 99.33 - 100.28	518	90.77 88.86 - 92.68	932
Use some method to treat drinking water	12.39(11.53) 11.01 - 13.77	2264	5.73 4.08 - 7.38	820	2.13 0.79 - 3.47	516	21.88 19.16 - 24.59	928
Household use of latrine								
Use household or communal latrine	79.97(80.02) 78.31 - 81.64	2272	85.85 83.41 - 88.30	820	64.86 60.66 - 69.07	518	83.3 80.85 - 85.74	934
Household with formal type of latrine	75.81(76.22) 74.02 - 77.60	2250	85.1 82.59 - 87.61	812	63.48 59.21 - 67.74	512	75.49 72.66 - 78.31	926
Reasons for not having a latrine		*n=419*		*n=102*		*n=167*		*n=150*
No Money/Latrine not provided	91.19(91.17) 88.36 - 94.02	382	88.24 81.49 - 94.98	90	94.01 90.11 - 97.91	157	90 84.87 - 95.13	135
No need/no tradition/no awareness	4(4.06) 2.01 - 6.00	17	5.88 0.83 - 10.94	6	2.99 0.11 - 5.88	5	4 0.53 - 7.47	6
No space/damaged by rain	4.33(4.3) 2.26 - 6.40	18	4.9 0.22 - 9.58	5	2.99 0.11 - 5.88	5	5.33 1.40 - 9.26	8
No water/no electricity/no sewerage/bad smell	0.47(0.48) -0.30 - 1.25	2	0.98 -1.42 - 3.38	1	0	0	0.67 -0.97 - 2.30	1

Indicator	DISTRICT % wt (unwt) 95% CI	Based on	DASKA % unwt 95% CI	Based on	PASROOR % unwt 95% CI	Based on	SIALKOT % unwt 95% CI	Based on
Observations on household hygiene								
Garbage present in the household around the door step	44.06(43.78) 42.00 - 46.13	2259	36.98 33.60 - 40.36	814	54.47 50.07 - 58.88	514	43.82 40.58 - 47.06	931
Excreta present in the household around the doorstep	27.84(27.59) 25.97 - 29.71	2262	20.27 17.45 - 23.09	814	40.62 36.29 - 44.95	517	26.75 23.85 - 29.64	931
Sewage water present in the household around the doorstep	36.87(36.41) 34.86 - 38.88	2266	27.08 23.9-30.1	816	48.84 44.4 - 53.2	518	37.6 34.5-40.8	932
Proportion of households where observation of drinking water container was possible	24.38(22.86) 22.55 - 26.22	2152	8.42 6.46 - 10.39	819	20 16.08 - 23.92	425	37.22 34.03 - 40.42	908
Drinking water container is covered	80.3(80.61) 76.68 - 83.93	490	82.61 72.94 - 92.28	69	90.59 83.79 - 97.38	85	77.68 73.08 - 82.28	336
Drinking water container was clean	87.15(87.3) 84.08 - 90.22	488	91.18 83.70 - 98.65	68	87.95 80.35 - 95.56	83	86.35 82.54 - 90.16	337
Water container is raised from ground level	77.83(77.57) 74.04 - 81.63	486	64.71 52.61 - 76.80	68	85.37 77.11 - 93.63	82	78.27 73.72 - 82.83	336
Households with their water container clean, covered and raised	66.66(66.46) 62.37 - 70.96	486	56.52 44.10 - 68.94	69	72.84 62.54 - 83.14	81	66.96 61.79 - 72.14	336
LHW visits to the household								
Proportion of households ever visited by a LHW	65.47(64.7) 63.49 - 67.45	2266	50.37 46.88 - 53.85	820	82.21 78.81 - 85.60	517	67.6 64.54 - 70.66	929
Time since last visit by an LHW		2203		799		505		899
Never visited by an LHW	35.53(36.31) 33.51 - 37.56	800	50.94 47.41 - 54.47	407	18.22 14.75 - 21.68	92	33.48 30.34 - 36.62	301
Last visit within a month	58.47(57.69) 56.39 - 60.55	1271	43.05 39.56 - 46.55	344	76.04 72.22 - 79.86	384	60.4 57.15 - 63.65	543
More than one but within last three months	5.05(5.08) 4.11 - 5.98	112	5.26 3.65 - 6.87	42	5.74 3.61 - 7.87	29	4.56 3.14 - 5.98	41
More than three but within last six months	0.62(0.59) 0.27 - 0.97	13	0.5 -0.05 - 1.05	4	0	0	1 0.29 - 1.71	9
More than six months but within the last year	0.33(0.32) 0.07 - 0.60	7	0.25 -0.16 - 0.66	2	0	0	0.56 0.01 - 1.10	5

Table 2. Mother and child indicators by tehsil

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
INFORMATION BASE								
Total mothers/care takers interviewed		2414		880		548		986
Respondents in each age group		*n=2406*		*n=877*		*n=547*		*n=982*
Less then 18 years	0.21(0.21) 0.01 - 0.42	5	0.11 -0.17 - 0.39	1	0.37 -0.23 - 0.96	2	0.2 -0.13 - 0.54	2
18-30 years	65.18(65.05) 63.26 - 67.10	1565	65.22 62.01- 68.43	572	60.51 56.32 - 64.70	331	67.41 64.43 - 70.40	662
31-50 years	33.2(33.33) 31.29 - 35.10	802	33.52 30.34 - 36.70	294	36.93 32.79 - 41.06	202	31.16 28.21 - 34.11	306
51 years and above	1.41(1.41) 0.92 - 1.91	34	1.14 0.38 - 1.90	10	2.19 0.87 - 3.51	12	1.22 0.48 - 1.96	12
Mothers/caretakers with some formal education	60.84(60.26) 58.87 - 62.82	1448/2403	57.37 54.04 - 60.71	502/875	52.38 48.10 - 56.66	286/546	67.21 64.22 - 70.20	660/982
Total children aged <60 months		3535		1303		791		1441
Among children 0-59 months of age	0.21(0.21) 0.01 - 0.42	5	0.11 -0.17 - 0.39	1	0.37 -0.23 - 0.96	2	0.2 -0.13 - 0.54	2
Proportion of boys	65.18(65.05) 63.26 - 67.10	1565	65.22 62.01- 68.43	572	60.51 56.32 - 64.70	331	67.41 64.43 - 70.40	662
Proportion of girls aged	33.2(33.33) 31.29 - 35.10	802	33.52 30.34 - 36.70	294	36.93 32.79 - 41.06	202	31.16 28.21 - 34.11	306
Children for whom their mothers provided the information	1.41(1.41) 0.92 - 1.91	34	1.14 0.38 - 1.90	10	2.19 0.87 - 3.51	12	1.22 0.48 – 1.96	12
MOTHERS'/CARETAKERS' KNOWLEDGE, ATTITUDE AND PRACTICES ABOUT CHILD HEALTH AND CARE								
Awareness about immunization								
Mothers having heard about immunization	98.16(98.21) 97.60 - 98.72	2365/2408	98.86 98.10 - 99.62	868/878	97.99 96.72 - 99.26	536/547	97.76 96.79 - 98.74	961/983
Sources to hear about immunization from (multiple responses recorded)		*n=2408*		*n=878*		*n=547*		*n=983*
Nowhere	1	23	0.5	4	0.4	2	1.7	17
Electronic media	21	506	21.9	192	20.1	110	20.8	204
Written material (newspaper, pamphlet)	0.9	22	0.7	6	1.1	6	1.0	10
Family, neighbours, friends	25	603	25.2	221	31.3	171	21.5	211
School	0.1	2	0	0	0.2	1	0.1	1
Doctor, hospital	24.6	592	21.0	184	19.7	108	30.5	300
LHW, LHV, Dai	8.1	194	3.9	34	11.7	64	9.8	96
Vaccination team	10.5	253	16.6	146	9.0	49	5.9	58
Announcement	12.3	297	13.9	122	6.2	34	14.5	141
Don't know (incl. I knew myself)	0.9	22	0.8	7	1.6	9	0.6	6
Mothers mentioning at least one illness prevented by immunization (even if	88.69(88.46) 87.40 - 89.98	2116/2392	87.63 85.39 - 89.87	765/873	84.1 80.94 - 87.25	460/547	91.67 89.88 - 93.46	891/972

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
incorrect)								
Mothers mentioning at least one correct illness that can be prevented by immunization	87.91(87.67) 86.58 - 89.24	2097/ 2392	86.94 84.65 - 89.23	759/873	82.45 79.17 - 85.73	451/547	91.26 89.43 - 93.08	887/972
Views about benefits of immunization								
Neighbours' views about immunizing as reported by mothers/caretakers		*n=2410*		*n=879*		*n=548*		*n=983*
Thinks it's worthwhile	95.94(95.98) 95.13 - 96.75	2313	96.02 94.67-97.37	844	96.9 95.35 - 98.44	531	95.42 94.06 - 96.78	938
Don't think it's worthwhile	0.93(0.95) 0.52 - 1.33	23	1.14 0.38 - 1.90	10	1.28 0.25 - 2.31	7	0.61 0.07 - 1.15	6
Don't know	3.13(3.07) 2.42 - 3.85	74	2.84 1.69 - 4.00	25	1.82 0.61 - 3.04	10	3.97 2.70 - 5.24	39
Mothers' own perception about immunizing the child		*n=2410*		*n=879*		*n=548*		*n=983*
Thinks it's worthwhile	98.55(98.46) 98.05 - 99.05	2373	97.5 96.41 - 98.59	857	98.72 97.69 - 99.75	541	99.19 98.57 - 99.80	975
Don't think it's worthwhile	1.11(1.16) 0.67 - 1.55	28	1.82 0.88 - 2.76	16	0.91 0.03 - 1.80	5	0.71 0.14 - 1.29	7
Don't know if it's worthwhile or not	0.34(0.37) 0.09 - 0.60	9	0.68 0.08 - 1.28	6	0.36 -0.23 - 0.96	2	0.1 -0.15 - 0.35	1
Reasons for being worthwhile		*n=2350*		*n=851*		*n=534*		*n=965*
Protection against illness	98.74(98.81) 98.27-99.21	2322	99.18 98.51-99.84	844	99.63 99.01-100.24	532	98.03 97.10 - 98.96	946
Important to immunize	1.08(1.02) 0.64-1.52	24	0.71 0.08-1.33	6	0.37 -0.24-0.99	2	1.66 0.8.- 2.52	16
Create immunities against	0.05(0.04) -0.06-0.16	1	0	0	0	0	0.10 -0.15 - 0.36	1
Govt order	0.13(0.13) -0.04-0.30	3	0.12 -0.17 - 0.40	1	0	0	0.21 -0.13 - 0.54	2
Reasons for not being worthwhile		*n=22*		*n=11*		*n=5*		*n=6*
Felt it is not necessary	21.28(18.18) 1.90 - 40.66	4	0	0	0	0	66.67 20.61 - 112.72	4
Child gets sick from vaccine	57.75(59.09) 34.84 - 80.66	13	63.64 30.66 - 96.61	7	80 34.9 - 125.0	4	33.33 -12.72 - 7939	2
Immunization has no effect	8.71(9.09) -5.34 - 22.77	2	9.09 -12.44 - 30.63	1	20 -25.0 - 65.06	1	0	0
Limbs stop working	4.09(4.55) -6.46 - 14.63	1	9.09 -12.44 - 30.63	1	0	0	0	0
Child may die	4.09(4.55) -6.46 - 14.63	1	9.09 -12.44 - 30.63	1	0	0	0	0
Hospital too far	4.09(4.55) -6.46 - 14.63	1	9.09 -12.44 - 30.63	1	0	0	0	0
Views about adverse effects of immunization								

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Mothers who have heard about any bad effects of immunization	3.06(2.97) 2.35 - 3.78	71/2393	2.29 1.24 - 3.34	20/874	2.01 0.74 - 3.28	11/547	4.12 2.81 - 5.42	40/972
Types of bad effects of immunization that mothers had heard of		*n=2393*		*n=874*		*n=547*		*n=972*
Nothing	96.94(97.03) 96.22 - 97.65	2322	97.71 96.66 - 98.76	854	97.99 96.72 - 99.26	536	95.88 94.58 - 97.19	932
Actual side-effects	1.23(1.13) 0.77 - 1.69	27	0.34 -0.10 - 0.79	3	0.37 -0.23 - 0.96	2	2.26 1.28 - 3.25	22
Incorrect perceptions	1.71(1.71) 1.17 - 2.25	41	1.83 0.88 - 2.78	16	1.46 0.37 - 2.56	8	1.75 0.87 - 2.62	17
No effect of vaccine	0.04(0.04) -0.06 - 0.13	1	0.11 -0.17 - 0.40	1	0 	0	0 	0
Not specified	0.09(0.08) -0.05 - 0.23	2	0 	0	0.18 -0.27 - 0.63	1	0.1 -0.15 - 0.36	1
Heard from somewhere specific	62.41(62.32) 50.26 - 74.56	43/69	60 36.03 - 83.97	12/20	66.67 30.31 - 103.02	6/9	62.5 46.25 - 78.75	25/40
Source of information about bad effects of immunization		*n=69*		*n=20*		*n=9*		*n=40*
Nowhere	2.8(2.9) -1.82 - 7.41	2	5 -7.05 - 17.05	1	0 	0	2.5 -3.59 - 8.59	1
Electronic media (incl govt)	4.38(4.35) -1.17 - 9.93	3	5 -7.05 - 17.05	1	0 	0	5 -3.00 - 13.00	2
Written material (newspaper, books, pamphlets)	4.54(4.35) -1.10 - 10.18	3	0 	0	11.11 -14.98 - 37.20	1	5 -3.00 - 13.00	2
Family, neighbours, friends	47.52(47.83) 35.02 - 60.03	33	50 25.59 - 74.41	10	55.56 17.54 - 93.58	5	45 28.33 - 61.67	18
Doctor/hospital	4.75(4.35) -0.99 - 10.49	3	0 	0	0 	0	7.5 -1.91 - 16.91	3
LHV/LHW/Dai	1.22(1.45) -2.09 - 4.53	1	5 -7.05 - 17.05	1	0 	0	0 	0
Don't know where (including " I knew it from myself")	34.79(34.78) 22.83 - 46.76	24	35 11.60 - 58.40	7	33.33 -3.02 - 69.69	3	35 18.97 - 51.03	14
Mothers who had discussed immunization in their family	88.76(88.65) 87.46 - 90.05	2102/ 2371	86.64 84.31 - 88.96	752/868	91.39 88.95 - 93.84	499/546	88.92 86.88 - 90.96	851/957
Knowledge about diarrhoea and its management								
Mentioned something as a reason for diarrhoea even if incorrect or non specific	87.38(87.38) 86.03 - 88.73	2085/2386	87.51 85.26 - 89.76	764/873	87.16 84.26 - 90.06	475/545	87.4 85.25 - 89.54	846/968
Mentioned correct reasons for diarrhoea	66.4(66.39) 64.49 - 68.32	1584/2386	67.93 64.77 - 71.08	593/873	61.47 57.29 - 65.65	335/545	67.77 64.77 - 70.76	656/968
Mother would give more fluid during diarrhoea	67.2(67.88) 65.30 - 69.10	1627/2397	69.52 66.42 - 72.63	609/876	83.33 80.12 - 86.55	455/546	57.74 54.59 - 60.90	563/975
Mother would give same or more food during diarrhoea	49.76(50.44) 47.74 - 51.78	1208/2395	61.76 58.48 - 65.03	541/876	38.28 34.11 - 42.45	209/546	47.07 43.88 - 50.26	458/973

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Mothers' interaction with LHW								
Proportion of mothers ever visited by a LHW	64.69(63.92) 62.77 - 66.62	1541/ 2411	49.66 46.30 - 53.02	437/880	81.39 78.04 - 84.74	446/548	66.94 63.95 - 69.93	658/983
Period since last LHW visit		2350		858		538		954
Never	36.23(37.02) 34.27 - 38.20	870	51.63 48.23 -55.03	443	18.96 15.55 - 22.36	102	34.07 31.01 - 37.13	325
Within the last one month	57.76(56.98) 55.74 - 59.78	1339	42.54 39.17 - 45.91	365	74.72 70.96 - 78.49	402	59.96 56.80 - 63.12	572
More than one but within last 6 months	4.98(5.02) 4.08 - 5.89	118	5.01 3.49 - 6.53	43	6.13 4.01 - 8.25	33	4.4 3.05 - 5.76	42
More than six month but within 1 year	0.67(0.64) 0.32 - 1.02	15	0.47 -0.05 - 0.98	4	0.19 -0.27 - 0.64	1	1.05 0.35 - 1.75	10
More than a year ago	0.35(0.34) 0.09 - 0.61	8	0.35 -0.10 - 0.80	3			0.52 0.01 - 1.03	5
Among mothers/caretakers ever visited by LHW								
LHW did tell something about diarrhoea prevention	11.33(11.09) 9.70 - 12.96	168/1515	10.11 7.17 - 13.06	44/435	7.06 4.55 - 9.57	31/439	14.51 11.70 - 17.31	93/641
LHW did tell something about diarrhoea treatment	18.73(18.35) 16.74 - 20.72	281/1531	14.87 11.42 - 18.32	65/437	15.51 12.03 - 18.98	69/445	22.65 19.35 - 25.95	147/649
LHW did tell something about recognizing ARI	1.08(1.12) 0.53 - 1.64	17/1523	2.08 0.62 - 3.54	9/433	0.23 -0.33 - 0.78	1/444	1.08 0.21 - 1.96	7/646
LHW did tell something about treatment for ARI	5.2(5.23) 4.06 - 6.35	80/1531	4.83 2.70 - 6.96	21/435	6.5 4.10 - 8.90	29/446	4.62 2.93 - 6.31	30/650
LHW did tell something about vaccination	23.5(22.67) 21.35 - 25.66	348/1535	11.9 8.75 - 15.05	52/437	21.75 17.81 - 25.69	97/446	30.52 26.91 - 34.13	199/652
CHILD HEALTH AND CARE								
Total children aged <60 months		3535		1303		791		1441
Proportion of children attending a school (incl. pre-primary schooling)	10.82(10.79) 9.77 - 11.88	369/3419	10.71 8.97 - 12.45	136/1270	10.15 7.97 - 12.34	79/778	11.23 9.52 - 12.94	154/1371
Proportion of children 0-6 months of age being exclusively breastfed	68.83(67.75) 64.34 - 73.32	292/431	50.31 42.23-58.40	80/159	83.78 76.48 - 91.09	93/111	73.91 66.82 - 81.01	119/161
Childhood Diarrhoea								
Prevalence of diarrhoea								
Children 0-59 months who suffered from diarrhoea during last 15 days	26.1(26.24) 24.59 - 27.60	876/3338	26.54 24.04 - 29.04	328/1236	29.74 26.45 - 33.03	229/770	23.95 21.62 - 26.28	319/1332
Children 0-59 months who suffered from diarrhoea during last 12 months	72.05(72.41) 70.51 - 73.59	2417/3338	74.51 72.04 - 76.98	921/1236	76.88 73.84 - 79.93	592/770	67.87 65.32 - 70.41	904/1332
Among those who suffered from diarrhoea during last 12 months								
Children whose last episode of diarrhoea lasted for more than 3 days	31.4(31.31) 29.45 - 33.35	697/2226	32.36 29.16 - 35.55	276/853	25.93 22.13 - 29.74	139/536	33.69 30.43 - 36.95	282/837
Children who had blood in stools during last episode of diarrhoea	6.8(6.66) 5.78 - 7.83	160/2404	5.45 3.92 - 6.97	50/918	5.92 3.93 - 7.91	35/591	8.38 6.51 - 10.25	75/895

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Treatment of diarrhoea (among those who suffered from diarrhoea during last 12 months)								
Household management of diarrhoea								
Proportion of children who were given more fluid during last episode of diarrhoea	61.24(61.72) 59.27 - 63.21	1482/ 2401	61.75 58.54 - 64.95	565/915	74.96 71.37 - 78.55	440/587	53.06 49.74 - 56.38	477/899
Proportion of children who were given same or more quantity of food during diarrhoea	53.15(53.87) 51.13 - 55.17	1289/ 2393	65.25 62.12 - 68.39	599/918	41.74 37.66 - 45.81	245/587	50.11 46.77 - 53.46	445/888
Proportion of children who were given anti-diarrhoeal drugs during last episode of diarrhoea	83.87(83.6) 82.38 - 85.37	2003/ 2396	81.82 79.26 - 84.37	747/913	80.95 77.69 - 84.21	476/588	87.15 84.90 - 89.40	780/895
Taking children with diarrhoea to a health facility/provider								
Type of health facility where the child taken for treatment		*n=2407*		*n=917*		*n=592*		*n=898*
Nowhere	22.59(22.89) 20.90 - 24.28	551	25.95 23.06 - 28.85	238	22.8 19.34 - 26.27	135	19.82 17.16 - 22.48	178
Government health facility	4.15(4.15) 3.33 - 4.96	100	3.05 1.89 - 4.22	28	7.43 5.24 - 9.63	44	3.12 1.93 - 4.31	28
Private qualified facility/practitioner	28.68(28.08) 26.85 - 30.51	676	24.32 21.49 - 27.15	223	22.13 18.70 - 25.56	131	35.86 32.67 - 39.05	322
Private, non medically qualified practitioner	41.72(42.21) 39.73 - 43.71	1016	46.13 42.85 - 49.41	423	44.76 40.67 - 48.85	265	36.53 33.32 - 39.73	328
NGO/services facility	2.66(2.45) 2.00 - 3.33	59	0.44 -0.04 - 0.92	4	2.2 0.93 - 3.46	13	4.68 3.24 - 6.11	42
LHW/LHV	0.2(0.21) 0.00 - 0.40	5	0.11 -0.16 - 0.38	1	0.68 -0.07 - 1.42	4	0	0
Proportion of children taken somewhere for treatment	77.41(77.11) 75.72 - 79.10	1856/ 2407	74.05 71.15 - 76.94	679/917	77.2 73.73 - 80.66	457/592	80.18 77.52 - 82.84	720/898
Experience at the health facility								
Doctor or a health worker present at the time of visit								
Government health facility	98.86(99) 96.28 - 101.44	99/100	100 98.21 - 101.79	28/28	100 98.86 - 101.14	44/44	96.43 87.77 - 105.09	27/28
Private qualified health provider	99.71(99.7) 99.23 - 100.19	672/674	99.55 98.44 - 100.66	221/222	100 99.62 - 100.38	131/131	99.69 98.92 - 100.45	320/321
Private unqualified health provider	99.6(99.6) 99.16 - 100.04	1008/ 1012	99.53 98.75 - 100.30	420/422	100 99.81 - 100.19	264/264	99.39 98.39 - 100.39	324/326
Proportion of children who were provided ORS								
Government health facility	55.43(56) 45.19 - 65.67	56/100	75 57.18 - 92.82	21/28	43.18 27.41 - 58.95	19/44	57.14 37.03 - 77.26	16/28
Private qualified health provider	42.58(42.92) 38.76 - 46.40	288/671	50.9 44.10 - 57.70	113/222	30.77 22.45 - 39.09	40/130	42.32 36.74 - 47.90	135/319
Private unqualified health provider	32.27(32.31) 29.34 - 35.21	326/1009	31.98 27.40 - 36.57	134/419	34.22 28.30 - 40.14	264/264	31.19 26.02 - 36.37	102/327

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Proportion of children who had all prescribed medicines from the health facility								
Government health facility	67.58(69) 57.91 - 77.26	69/100	92.86 81.53 - 104.18	26/28	63.64 48.29 - 78.99	28/44	53.57 33.31 - 73.83	15/28
Private qualified health provider	55.92(56.5) 52.08 - 59.75	378/669	55.2 48.42 - 61.99	122/221	81.4 74.29 - 88.50	105/129	47.34 41.70 - 52.97	151/319
Private unqualified health provider	90.17(90.68) 88.29 - 92.06	915/1009	94 91.61 - 96.40	392/417	94.34 91.37 - 97.31	264/264	83.49 79.31 - 87.66	273/327
Proportion of children for whom the health worker gave full explanation about illness								
Government health facility	39.52(39.39) 29.38 - 49.65	39/99	46.43 26.17 - 66.69	13/28	29.55 14.93 - 44.16	13/44	48.15 27.45 - 68.85	13/27
Private qualified health provider	64.33(64.5) 60.56 - 68.11	416/645	67.42 61.02 - 73.83	149/221	60.87 51.51 - 70.22	70/115	63.75 58.23 - 69.28	197/309
Private unqualified health provider	45.94(45.71) 42.75 - 49.13	442/967	45.06 40.15 - 49.97	187/415	41.38 34.83 - 47.93	96/232	49.69 44.05 - 55.32	159/320
Satisfaction with the service provider								
Government health facility								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	93.31(94) 87.92 - 98.71	94/100	100 98.21 - 101.7	28/28	97.73 92.19 - 103.27	43/44	82.14 66.17 - 98.11	23/28
Proportion of children whose parents were satisfied with the treatment	91.33(92) 85.32 - 97.35	92/100	100 98.21-101.7	28/28	93.18 84.60-101.7	41/44	82.14 66.17-98.11	23/28
Reason for being satisfied		*n=91*		*n=27*		*n=41*		*n=23*
Good doctor/staff available	3.19(3.3) -0.97 - 7.36	3	7.41 -4.32 - 19.14	2	0	0	4.35 -6.16 - 14.86	1
Good treatment	96.81(96.7) 92.64 - 100.97	88	92.59 80.86 - 104.32	25	100 98.78 - 101.22	41	95.65 85.14 - 106.16	22
Reason for being dissatisfied		*n=8*		*n=0*		*n=3*		*n=5*
Poor facilities/services	13.14(12.5) -16.52 - 42.80	1	0	0	0	0	20 -25.06 - 65.06	1
Treatment not good	86.86(87.5) 57.20 - 116.52	7	0	0	100 83.33 - 116.67	3	80 34.94 - 125.06	4
Private qualified health provider								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	97.47(97.47) 96.21 - 98.74	654/671	97.3 94.94 - 99.66	216/222	97.69 94.73 - 100.66	127/130	97.49 95.62 - 99.36	311/319
Proportion of children whose parents were satisfied with the treatment	95.58(95.55) 93.95 - 97.20	644/674	95.52 92.58 - 98.46	213/223	94.66 90.42 - 98.89	124/131	95.94 93.62 - 98.26	307/320
Reason for being satisfied		*n=639*		*n=211*		*n=123*		*n=305*
Good doctor/staff available	6.71(6.73) 4.69 - 8.73	43	7.58 3.77 - 11.39	16	4.88 0.66 - 9.09	6	6.89 3.88 - 9.89	21
Good treatment	93.29(93.27) 91.27 - 95.31	596	92.42 88.61 - 96.23	195	95.12 90.91 - 99.34	117	93.11 90.11 - 96.12	284

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Reason for being dissatisfied		*n=29*		*n=9*		*n=7*		*n=13*
Treatment not good	100(100) 98.28 - 101.72	29	100 94.44 - 105.56	9	100 92.86 - 107.14	7	100 96.15 - 103.85	13
Private unqualified health provider								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	95.94(95.84) 94.67 - 97.21	968/1010	94.27 91.93 - 96.62	395/419	97.74 95.76 - 99.72	264/264	97.74 95.76 - 99.72	259/265
Proportion of children whose parents were satisfied with the treatment	92.32(92.3) 90.63 - 94.01	935/1013	91.90 89.18-94.63	386/420	92.83 89.54-96.13	246/265	92.38 89.35-95.40	244/265
Reason for being satisfied		*n=935*		*n=386*		*n=246*		*n=303*
Good doctor/staff available	3.39(3.32) 2.18 - 4.61	31	3.37 1.44 - 5.30	13	1.22 -0.36 - 2.79	3	4.95 2.34 - 7.56	15
Good treatment	95.96(96.04) 94.64 - 97.27	898	95.85 93.74 - 97.97	370	98.78 97.21 - 100.36	243	94.06 91.23 - 96.89	285
Good access/nearby	0.65(0.64) 0.08 - 1.22	6	0.78 -0.23 - 1.78	3	0	0	0.99 -0.29 - 2.27	3
Reason for being dissatisfied		*n=78*		*n=34*		*n=19*		*n=25*
Good doctor/staff not available	4.88(5.13) -0.23 - 9.54	4	8.82 -2.18 -19.83	3	0	0	4 -5.68-13.68	1
Poor facilities/services	1.48(1.28) -1.41 - 4.37	1	0	0	0	0	4 -5.68-13.68	1
Treatment not good	88.46(88.41) 81.81 - 95.01	1	85.29 71.92-98.67	29	100 97.37-102.63	19	84.00 67.63-100.37	21
Too expensive/can't afford	2.56(2.61) -1.00 - 6.23	2	2.94 -4.12 -10.09	1	0	0	4 -5.68-13.68	1
No other choice	2.61(2.56) -1.00 - 6.23	2	2.94 -4.12 -10.09	1	0	0	4 -5.68-13.68	1
Cost of treatment of diarrhoea								
Travel cost								
Government health facility								
Paid some cost	38.16(38) 28.14 - 48.18	38/100	39.29 19.41 - 59.16	11/28	34.09 18.95 - 49.23	15/44	42.86 22.74 - 62.97	12/28
Mean amount paid in Pak Rs.	90.69 (87.16) 24.87 - 156.52	38	60.545 17.0 - 104.0	11	61.33 15.1 - 107.5	15	143.833 -11.1 - 298.8	12
Private qualified health provider								
Paid some cost	58.26(59.4) 54.45 - 62.07	398/670	65.45 58.94 - 71.97	144/220	81.68 74.67 - 88.69	107/131	46.08 40.45 - 51.71	147/319
Mean amount paid in Pak Rs.	83.39 (82.14) 57.29 - 109.50	397	88.5 58.8 - 118.2	144	35.3 22.5 - 48.1	107	110.10 76.0 - 144.1	146
Private unqualified health provider								
Paid some cost	21.04(20.85) 18.48 - 23.60	211/1012	13.03 9.70 - 16.36	55/422	38.4 32.33 - 44.47	101/263	16.82 12.61 - 21.03	55/327
Mean amount paid in Pak Rs.	43.86 (41.73) 22.76 - 64.96	211	28.7 21.14- 36.34	55	24.3 19.1 - 29.6	101	86.5 38.31 - 134.7	55

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Treatment cost at the facility								
Government health facility								
Paid some cost	93.81(93.94) 88.56 - 99.06	93/99	96.43 87.77 - 105.09	27/28	93.02 84.25 - 101.80	40/43	92.86 81.53 - 104.18	26/28
Mean amount paid in Pak Rs.	200.85(205.45) -15.83 - 417.54	93	400.3 -100.4 - 901.2	27	42.97 -35.2 - 121.2	40	253 -11.8 - 517.8	26
Private qualified health provider								
Paid some cost	96.35(96.23) 94.84 - 97.85	639/664	94.98 91.86 - 98.10	208/219	96.12 92.41 - 99.84	124/129	97.15 95.16 - 99.14	307/316
Mean amount paid in Pak Rs.	384.94(383.32) 218.23 -551.64	638	448.7 277.3 - 620.0	208	130.1 91.2 - 169.0	124	441.4 196.9 - 685.9	306
Private unqualified health provider								
Paid some cost	97.77(97.7) 96.80 - 98.73	978/1001	97.12 95.40 - 98.85	405/417	97.69 95.67 - 99.71	264/264	97.69 95.67 - 99.71	254/260
Mean amount paid in Pak Rs.	74.494(73.26) 60.268 -88.719	978	63.93 53.79 - 74.08	405	68.0 54.8 - 81.14	254	89.2 65.6 - 112.93	319
Cost of medicines or investigations outside the facility								
Government health facility								
Paid some cost	31.82(30.61) 22.09 - 41.56	30/98	14.29 -0.46 - 29.03	4/28	30.95 15.78 - 46.12	13/42	46.43 26.17 - 66.69	13/28
Mean amount paid in Pak Rs.	740.62(812.5) -46 - 1527.24	30	3600 -249.4 -7449.4	4	446.5 -141.1 -1034.2	13	320.7 123.7 - 517.7	13
Private qualified health provider								
Paid some cost	44.08(43.54) 40.23 - 47.92	290/666	45.5 38.72 - 52.27	101/222	18.6 11.50 - 25.71	24/129	52.38 46.71 - 58.06	165/315
Mean amount paid in Pak Rs.	690.33(671.94) 166.8 -1213.85	288	529.5 353.2 - 705.7	100	189.5 106.4 - 272.6	24	829.3 194.9 - 1463.8	164
Private unqualified health provider								
Paid some cost	9.28(8.7) 7.44 - 11.11	88/1011	5.01 2.80 - 7.22	21/419	4.53 1.84 - 7.22	264/264	4.53 1.84 - 7.22	12/265
Mean amount paid in Pak Rs.	179.92(175.74) 118.29 -241.55	88	140.7 47.0 - 234.3	21	66.91 41.7 - 92.0	12	212.8 109.4 - 316.2	55
Childhood Acute Respiratory Infections (ARI)								
Prevalence of ARI								
Proportion of 0-59 children who suffered from ARI within last 15 days	33.64(33.65) 32.03 - 35.24	1144/3400	32.57 29.95 - 35.19	413/1268	37.11 33.65 - 40.58	288/776	32.67 30.14 - 35.20	443/1356
0-59 children who suffered from ARI in the last 12 months	76.45(77.15) 75.01 - 77.89	2623/3400	81.07 78.88 - 83.27	1028/1268	86.47 84.00 - 88.94	264/264	86.47 84.00 - 88.94	671/776
Taking children with ARI for treatment at the health facility (Among children who suffered from ARI during last 12 months)								
Type of health facility where the child was taken for treatment		*n=2614*		*n=1025*		*n=670*		*n-919*
Nowhere	14.24(14.31) 12.89 - 15.60	374	15.51 13.25 - 17.78	159	12.69 10.09 - 15.28	85	14.15 11.84 - 16.45	130

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Government health facilities	5.33(5.36) 4.45 - 6.21	140	4.98 3.60 - 6.36	51	7.16 5.14 - 9.19	48	4.46 3.07 - 5.85	41
Private qualified facility/practitioners	30.6(29.99) 28.81 - 32.38	784	25.85 23.12 - 28.58	265	25.37 22.00 - 28.74	170	37.98 34.78 - 41.17	349
Private unqualified practitioners incl. spiritual or religious healer	47.73(48.39) 45.79 - 49.66	1265	53.17 50.07 - 56.27	545	52.84 48.98 - 56.69	354	39.83 36.61 - 43.05	366
NGO/services facilities	2.07(1.91) 1.50 - 2.63	50	0.49 0.01 - 0.96	5	1.79 0.71 - 2.87	12	3.59 2.33 - 4.85	33
LHW / LHV	0.04(0.04) -0.06 - 0.13	1	0	0	0.15 -0.22 - 0.52	1	0	0
Proportion children taken somewhere or consulted for treatment of ARI	85.76(85.69) 84.40 - 87.11	2300/ 2688	84.49 82.25-86.73	888/1051	87.26 84.67-89.85	589/675	85.55 83.28-87.82	823/962
Experience at the health facility								
Doctor or a health worker present at the time of visit								
Government health facility	99.17(99.28) 97.29 - 101.05	137/138	100 99.00 - 101.00	50/50	100 98.96 - 101.04	48/48	97.5 91.41 - 103.59	39/40
Private qualified health provider	99.12(99.09) 98.40 - 99.84	765/772	98.44 96.74 - 100.15	253/257	100 99.70 - 100.30	169/169	99.13 98.01 - 100.25	343/346
Private unqualified health provider	99.34(99.35) 98.84 - 99.83	1223/ 1231	99.23 98.37 - 100.08	513/517	100 99.86 - 100.14	350/350	98.9 97.69 - 100.11	360/364
Proportion of children who had all prescribed medicines from the health facility								
Government health facility	75.28(76.09) 67.72 - 82.84	107/143	90 80.68 - 99.32	45/50	66.67 52.29 - 81.04	264/264	66.67 52.29 - 81.04	32/48
Private qualified health provider	59.52(60.16) 55.98 - 63.05	462/768	60.78 54.60 - 66.97	155/255	78.57 72.07 - 85.07	132/168	50.72 45.30 - 56.15	175/345
Private unqualified health provider	91.75(92.1) 90.17 - 93.34	1119/ 1215	94.47 92.38 - 96.56	478/506	93.97 91.32 - 96.61	327/348	86.98 83.37 - 90.59	314/361
Proportion of children for whom the health worker gave full explanation about illness								
Government health facility	43.55(43.38) 34.85 - 52.25	59/136	48.98 33.96 - 64.00	24/49	29.79 15.65 - 43.93	14/47	52.5 35.77 - 69.23	21/40
Private qualified health provider	70.06(69.99) 66.73 - 73.40	527/753	71.48 65.76 - 77.21	183/256	62.99 55.04 - 70.94	97/154	72.01 67.11 - 76.91	247/343
Private unqualified health provider	50.31(50.26) 47.40 - 53.22	586/1166	50.8 46.32 - 55.27	255/502	47.44 41.73 - 53.14	148/312	51.99 46.63 - 57.35	183/352
Satisfaction with the service provider								
Government health facility								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	95.48(95.68) 91.66 - 99.29	137/144	100 99.02 - 100.98	51/51	91.67 82.81 - 100.53	44/48	93.33 84.93 - 101.73	42/45
Proportion of children whose parents were satisfied with the treatment	91.31(91.37) 86.27 - 96.36	127/139	94 86 88.14 - 101.58	47/50	87.5 77.10 - 97.90	42/48	92.68 83.49 - 101.87	38/41
Reason for being satisfied		*n=127*		*n=47*		*n=42*		*n=38*
Good doctor/staff available	4.1(3.94) 0.26 - 7.94	5	4.26 -2.58 - 11.09	2	0	0	7.89 -1.99 - 17.78	3

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Good treatment	95.11(95.28) 90.97 - 99.26	121	95.74 88.91 - 102.5	45	97.62 91.82 - 103.42	41	92.11 82.22 - 101.99	35
Good access/nearby	0.79(0.79) -1.14 - 2.72	1	0	0	2.38 -3.42 - 8.18	1	0	0
Reason for being dissatisfied		*n=11*		*n=2*		*n=6*		*n=3*
Treatment not good	100(100) 95.45 - 104.55	11	100 75.00 - 125.00	2	100 91.67 - 108.33	6	100 83.33 - 116.67	3
Private qualified health provider								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	97.35(97.28) 96.15 - 98.55	750/771	96.48 94.03 - 98.94	247/256	97.04 94.19 - 99.89	164/169	97.98 96.35 - 99.60	339/346
Proportion of children whose parents were satisfied with the treatment	96.35(96.38) 94.97 - 97.74	746/774	96.89 94.57 - 99.20	249/257	95.88 92.60 - 99.16	163/170	96.25 94.11 - 98.40	334/347
Reason for being satisfied		*n=745*		*n=249*		*n=162*		*n=334*
Good doctor/staff available	7.18(7.25) 5.26 - 9.10	54	10.04 6.11 - 13.97	25	1.85 -0.53 - 4.24	3	7.78 4.76 - 10.81	26
Good treatment	92.59(92.48) 90.64 - 94.54	689	89.16 85.09 - 93.22	222	98.15 95.76 - 100.53	159	92.22 89.19 - 95.24	308
Good access/nearby	0.23(0.27) -0.18 - 0.64	2	0.8 -0.51 - 2.11	2	0	0	0	0
Reason for being dissatisfied		*n=28*		*n=8*		*n=7*		*n=13*
Treatment not good	3.45(3.57) -5.10 - 11.99	1	0	0	14.29 -18.78 - 47.35	1	0	0
No other choice	96.55(96.43) 88.01 - 105.10	27	100 93.75 - 106.25	8	85.71 52.65 - 118.7	6	100 96.15 - 103.85	13
Private unqualified health provider								
Proportion of children whose parents were satisfied with behaviour of doctor/health worker	96.69(96.71) 95.64 - 97.74	1174/1214	96.24 94.48 - 98.00	486/505	98.29 96.78 - 99.79	344/350	95.82 93.61 - 98.03	344/359
Proportion of children whose parents were satisfied with the treatment	92.71(92.7) 91.21 - 94.21	1130/1219	92.29 89.87 - 94.72	467/506	93.43 90.69 - 96.17	327/350	92.56 89.72 - 95.40	336/363
Reason for being satisfied		*n=1118*		*n=462*		*n=324*		*n=332*
Good doctor/staff available	3.97(4.11) 2.78 - 5.16	46	6.28 3.96 - 8.60	29	1.85 0.23 - 3.47	6	3.31 1.24 - 5.39	11
Good facilities/services	0.1(0.09) -0.13 - 0.34	1	0	0	0	0	0.3 -0.44 - 1.04	1
Good treatment	95.08(94.99) 93.77 - 96.39	1062	93.07 90.65 - 95.50	430	97.84 96.10 - 99.58	317	94.88 92.36 - 97.40	315
Good access/nearby	0.84(0.81) 0.26 - 1.42	9	0.65 -0.19 - 1.49	3	0.31 -0.45 - 1.07	1	1.51 0.05 - 2.97	5
Reason for being dissatisfied		*n=87*		*n=38*		*n=23*		*n=26*
Good doctor/staff not available	3.2(3.45) -1.07 - 7.47	3	5.26 -3.15 - 13.68	2	4.35 -6.16 - 14.86	1	0	0
Poor facilities/services	2.66(2.3) -1.30 - 6.62	2	0	0	0	0	7.69 -4.47 - 19.86	2

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Treatment not good	89.44(89.66) 82.40 - 96.47	78	89.47 78.40 -100.55	34	95.65 85.14 - 106.16	22	84.62 68.82 - 100.4	22
Too expensive/can't afford	1.33(1.15) -1.65 - 4.31	1	0	0	0	0	3.85 -5.47 - 13.16	1
No other choice	3.37(3.45) -1.00 - 7.74	3	5.26 -3.15 - 13.68	2	0	0	3.85 -5.47 - 13.16	1
Cost of treatment of ARI								
Travel cost								
Government health facility								
Paid some cost	40.93(40.15) 32.33 - 49.53	55/137	36 21.70 - 50.30	18/50	32.61 17.97 - 47.24	15/46	53.66 37.18 - 70.14	22/41
Mean amount paid in Pak Rs.	64.19(61.67) 35.47 - 92.92	55	43.11 13.98 - 72.24	18	38.33 9.455 - 67.2	15	92.7 40.1 - 145.3	22
Private qualified health provider								
Paid some cost	60.03(61.05) 56.49 - 63.58	464/760	63.53 57.43 - 69.63	162/255	85.8 80.24 - 91.36	145/169	46.73 41.24 - 52.21	157/336
Mean amount paid in Pak Rs.	60.87(59.26) 48.83 - 72.91	464	48.16 39.3 - 57.0	162	46.47 29.1 - 63.7	145	82.5 62.4 - 102.5	157
Private unqualified health provider								
Paid some cost	19.23(19.28) 16.98 - 21.49	234/1214	14.93 11.74 - 18.13	76/509	31.69 26.62 - 36.75	109/344	13.57 9.90 - 17.25	49/361
Mean amount paid in Pak Rs.	28.68(28.56) 20.69 - 36.67	234	32.13 22.024 - 42.2	76	22.3 18.8 - 25.8	109	36.7 18.7 - 54.845	49
Treatment cost at the facility								
Government health facility								
Paid some cost	88.69(88.89) 82.98 - 94.40	123/140	90 80.68 - 99.32	45/50	91.11 81.69 - 100.54	264/264	91.11 81.69 - 100.5	41/45
Mean amount paid in Pak Rs.	162.15(158.24) 4.8 - 319.51	120	197.1 -51.3 - 445.6	44	7.36 -0.003 - 14.7	41	286.0 -72.4 - 644.5	35
Private qualified health provider								
Paid some cost	96.34(96.43) 94.93 - 97.74	729/756	263.2 145.2 - 381.2	244	227.8 117.4 - 338.3	164	257.5 91.9 - 423.0	321
Mean amount paid in Pak Rs.	252.66(252.76) 169.55 -335.77	729	39.44 33.20 - 45.69	99/251	20.96 14.49 - 27.43	35/167	50.45 44.96 - 55.93	170/337
Private unqualified health provider								
Paid some cost	96.81(96.81) 95.77 - 97.85	1154/ 1192	97.18 95.63 - 98.74	483/497	95.87 93.60 - 98.14	325/339	97.19 95.33 - 99.05	346/356
Mean amount paid in Pak Rs.	61.13(60.09) 46.44 - 75.81	1154	54.02 48.3 - 59.7	483	51.5 46.1 - 57.0	325	76.5 42.0 - 110.9	346
Cost of medicines or investigations outside the facility								
Government health facility								
Paid some cost	22.4(22.06) 15.03 - 29.78	30/136	16 4.84 - 27.16	8/50	26.09 12.31 - 39.86	264/264	26.09 12.31 - 39.86	12/46

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Mean amount paid in Pak Rs.	413.81 (422.1) 60.08 - 767.54	30	837.5 -89.1 - 1764.1	8	69.583 48.7 - 90.4	12	512.8 -96.0 - 1121.6	10
Private qualified health provider								
Paid some cost	40.96(40.26) 37.38 - 44.53	304/755	349.9 147.9 - 551.9	99	265.2 96.0 - 434.3	35	296.8 198.5 - 395.0	170
Mean amount paid in Pak Rs.	307.95(310.49) 229.14 -386.77	304	97.63 95.56 - 99.70	247/253	99.4 97.94 - 100.87	167/168	98.22 96.67 - 99.78	332/338
Private unqualified health provider								
Paid some cost	7.56(7.2) 6.03 - 9.09	87/1208	4.78 2.81 - 6.75	24/502	5.17 2.70 - 7.64	18/348	12.57 9.00 - 16.14	45/358
Mean amount paid in Pak Rs.	125.06(121.92) 73.12 - 177.01	87	102.7 72.6 - 132.7	24	61.5 41.08 - 81.92	18	156.3 68.5 - 244.0	45
Prevalence and cost on treatment of measles								
Proportion of children 10-59 months ever suffering from measles	16.57(16.85) 15.38 - 17.76	456/2707	19.51 17.02 - 21.99	198/1015	17.24 14.17 - 20.30	106/615	14.11 11.99 - 16.24	152/1077
Proportion of children 10-59 months suffering from measles during last 24 months	13.01(13.15) 11.73 - 14.30	356/2707	14.48 12.27 - 16.70	147/1015	13.33 10.57 - 16.10	82/615	11.79 9.82 - 13.76	127/1077
Among 10-59 children who suffered from measles during last 24 months								
Paid some cost for treatment of measles	60.5(60.12) 55.04 - 65.96	196/326	59.85 51.28 - 68.43	82/137	50.63 38.98 - 62.29	40/79	67.27 58.05 - 76.50	74/110
Mean amount paid in Pak Rs.	339.533(330.1) 247.3 - 432.03	196	283.902 188.5 - 379.3	82	190.75 118.6 - 262.9	40	456.824 245.5 - 668.2	74
Immunization of Children								
Who decides about immunizing the child (children 0-59 months of age)		*n=3345*		*n=1238*		*n=773*		*n=1334*
Mothers alone (incl step mother)	70.45(71.3) 68.89 - 72.01	2385	77.06 74.68 - 79.44	954	79.82 76.92 - 82.71	617	61.02 58.36 - 63.67	814
mother with father	10.83(10.19) 9.77 - 11.90	341	5.82 4.47 - 7.16	72	3.88 2.45 - 5.31	30	17.92 15.82 - 20.01	239
mother not involved at all	18.71(18.51) 17.38 - 20.05	619	17.12 14.99 - 19.26	212	16.3 13.63 - 18.97	126	21.06 18.84 - 23.29	281
Mother decides or is involved in the decision	81.29(81.49) 79.95 - 82.62	2726/ 3345	82.88 80.74 - 85.01	1026/ 1238	83.7 81.03 - 86.37	647/773	78.94 76.71 - 81.16	1053/ 1334
Vaccine coverage								
No. children aged 12 to 23 months		703		249		164		290
Among children 12-23 months of age								
Proportion reported to have received BCG (TB) vaccine	94.94(94.9) 93.22 - 96.65	651/686	93 89.59 - 96.42	226/243	98.77 96.78 - 100.77	161/163	94.29 91.39 - 97.18	264/280
Proportion having BCG scar on the left upper arm	76.5(76.05) 72.77 - 80.23	397/522	70.1 63.57 - 76.63	143/204	80.8 73.50 - 88.10	101/125	79.27 73.30 - 85.25	153/193
Proportion reported to have received any DPT vaccine	94.8(94.75) 93.06 - 96.53	650/686	93.44 90.13 - 96.75	228/244	96.95 94.02 - 99.89	159/164	94.6 91.77 - 97.44	263/278

Indicator	District % wt (unwt) 95% CI	Based on	DASKA unwt 95% CI	Based on	PASROOR unwt 95% CI	Based on	SIALKOT unwt 95% CI	Based on
Proportion reported to have received full course of DPT vaccine	87.6(87.76) 85.06 - 90.14	602/686	86.89 82.44 - 91.33	212/244	94.51 90.72 - 98.30	155/164	84.53 80.10 - 88.96	235/278
Proportion reported to have received measles vaccine	86.26(86.13) 83.61 - 88.91	590/685	82.38 77.39 - 87.36	201/244	92.59 88.25 - 96.93	150/162	85.66 81.37 - 89.95	239/279
Mean age at which received measles vaccine	9.037 (9.031) 8.979 - 9.094	577	8.97 8.847 - 9.092	198	9.027 8.951 - 9.103	148	9.087 9.013 - 9.160	231
Proportion of children 10-59 months old reported to have received measles vaccine	90.87(90.79) 89.96 - 91.78	2544/ 2802	89 87.05 - 90.94	930/1045	93.78 91.81 - 95.75	588/627	90.8 89.07 - 92.53	1026/1130
Proportion reported to have received at least one dose of polio vaccine during last 12 months *Among children 12-59 months of age*	99.83(99.85) 99.51 - 100.16	681/682	100 99.79 - 100.2	240/240	100 99.70 - 100.30	164/164	99.64 98.76 - 100.52	277/278
Proportion reported to have received at least one dose of polio vaccine during last 12 months *Among children 0-59 months of age*	99.85(99.85) 99.71 - 99.99	2688/ 2692	99.8 99.48 - 100.1	1005/ 1007	100 99.92 - 100.08	605/605	99.81 99.51 - 100.1	1078/ 1080
Reasons for not being vaccinated at all or only partially vaccinated		*n=252*		*n=125*		*n=35*		*n=92*
Carelessness on part of family members	39.27(40.48) 34.02 - 44.53	102	49.6 40.43 - 58.77	62	40 22.34 - 57.66	14	28.26 18.52 - 38.01	26
Family members don't have time/no one to take	12.37(11.51) 8.76 - 15.98	29	6.4 1.71 - 11.09	8	2.8 -4.09 - 9.81	1	21.74 12.77 - 30.71	20
vaccination would cause harm to the child	13.95(13.89) 10.16 - 17.74	35	12 5.90 - 18.10	15	22.86 7.52 - 38.20	8	13.04 5.62 - 20.47	12
Lack of awareness/ misperception about schedule	6.86(6.35) 4.04 - 9.68	16	0.8 -1.16 - 2.76	1	17.14 3.23 - 31.06	6	9.78 3.17 - 16.40	9
No facility nearby/access issue	15.50(15.48) 11.55 - 19.45	39	16.8 9.85 - 23.75	21	5.71 -3.40 - 14.83	2	17.39 9.10 - 25.68	16
Don't believe/useless/no tradition	5.44(5.56) 2.89 - 7.99	14	6.4 1.71 - 11.09	8	5.71 -3.40 - 14.83	2	4.35 -0.36 - 9.06	4
Family members don’t allow	4.28(4.37) 1.98 - 6.57	11	4.8 0.65 - 8.95	6	5.71 -3.40 - 14.83	2	3.26 -0.91 - 7.43	3
Can't afford/poor	2.32(2.38) 0.56 - 4.08	6	3.2 -0.29 - 6.69	4	0	0	2.17 -1.35 - 5.70	2
Nutritional status of the child (Mid upper arm circumference MUAC)								
Proportion of 0-59 months old children perceived by their mothers to be normal or big for their age	86.65(86.8) 85.49 - 87.80	2966/ 3417	87.56 85.70 - 89.41	1112/ 1270	89.23 86.99 - 91.47	696/780	84.71 82.77 - 86.66	1158/ 1367
Proportion of 0-59 months old children measured as malnourished (MUAC < 12.5 cm)	5.49(5.48) 4.60 - 6.37	146/2663	6.13 4.64 - 7.62	65/1061	3.25 1.73 - 4.78	19/584	6.09 4.57 - 7.61	62/1018

Annex 6
Main indicators from community profiles and LHW interviews

Table 1. Indicators from community profiles

Indicator		Number of communities
Total number of communities visited		39
Urban communities		11
Rural communities		28
Garbage disposal system		
Communities with a system for removing garbage from individual households		7/39
Communities with a government system for removing garbage from the community		6/39
Frequency of removal of garbage by the government system		*(n=6)*
	Daily	3
	Not every day but at least once in a week	1
	Less frequently than once in a month	2
Communities with a proper method for disposal of garbage (including those with government system)		26/37
Communities with large amounts of garbage piled in the streets		36/39
Communities with large amounts of human/animal excreta in the streets		22/38
Sewerage system		
Communities with a government sewerage system		36/39
Communities with a better sewerage system		18/37
Communities with large amounts of stagnant water/ sewage in the streets		23/39
Drinking water		
Communities with sweet ground water		39/39
Availability of health facilities		
Within 5 km		
Availability of a health facility		*(n=39)*
	Government	34
	Private	22
	Any (government or private)	33
Availability of an evening/24 hr health facility		
	Government	13/39
	Private	20/38
	Any (government or private)	22/39
Within 1 km		
Availability of a health facility		
	Government	17/39
	Private	30/38
	Any (government or private)	33/39
Availability of an evening/24 hr health facility		
	Government	5/39
	Private	23/38
	Any (government or private)	25/39
Availability of immunization services		
Availability of a health facility with immunization services for children within 5 km		
	Government	31/38
	Private	13/38
	Any (government or private)	33/39
Availability of a health facility with immunization services for children within 1 km		
	Government	16/39
	Private	7/38
	Any (government or private)	18/39

Indicator	Number of communities
Usual place for people in the community to take their children to be immunized	*(n=31)*
Government health facility	20
Private qualified facility/practitioner	1
Vaccination team visit at home	10
Communities where people take their children to a health facility for immunization	21/31
Communities visited by a vaccination team/person for routine immunization	30/37
Frequency of visit by a vaccination team to the community for routine immunization	*(n=32)*
Never visited	7
At least once every month	21
Not every month but at least once every 6 months	4
Period since last visit by a vaccination team for routine immunization	*(n=28)*
Never visited	7
Last visit with in a month	21
More than one month, but with in the last 6 months	4
More than 6 months , but with in last year	1
Polio campaign	
Communities with a Polio Campaign/Day celebrated within last one month	30/32
Number of polio campaign/days in the community in the last 12 months	*(n=36)*
2	1
3	13
4	5
6	5
8	2
10	3
Yes but numbers not specified	7
Community organization	
Communities with any NGOs/CBOs/voluntary organizations/committees	4/35
Communities with any women organization	2/35
Communities with any existing CCB	1/34
Communities with any project done by a CCB	3/33
Type of projects done by CCBs	*(n=3)*
Sanitation/drainage	1
Pavement of roads/streets	2

Table 2. Indicators from LHW interviews

Indicator	Number of LHWs
General information	
Total number of LHWs interviewed	41
Age distribution of LHWs	*(n=41)*
18-30 years	26
31-40 years	11
41 years and above	4
Formal education level	*(n=41)*
Less than 10th grade	6
Up to 10th grade	32
More then 10th grade	3
Period since started working as an LHW	*(n=41)*
Less then one year	1
More then a year up to 5 years	22
More then 5 years up to 10 years	17
More then 10 years	1
Training of LHWs	
Period since received initial training	*(n=41)*
Within last one year	1
More than a year but within last two years	21
More than two years ago	19
LHWs receiving any further refresher training	36/41
Period since received refresher training	*(n=35)*
Within last three months/still going on	25
More than three months but within the last six months	7
More than six months but within the last one year	3
Household visits	
Number of households covered by LHWs	*(n=41)*
150 or less households	22
More than 150 households	19
Factors that would aid LHWs to visit the households (multiple responses recorded)	*(n=41)*
Nothing needed	35
Community support	7
More medicines/equipment	2
Supervisory support	
Frequency of visit by a supervisor	*(n=41)*
Once a month or less frequently (including “no one visits”)	25
More than once a month	16
LHWs visited by a supervisor within last one month	37/39
Knowledge and practices about immunization	
LHWs that could mention at least one correct illness prevented by immunisation	41/41
LHWs that have heard about any bad effects of immunization	11/41
Type of bad effects of immunisation heard by LHWs	*(n=41)*
Nothing	30
Actual side-effects	9
Incorrect perceptions	2
Source from where heard about bad effects of immunization	*(n=11)*
Family/neighbours, (including knew myself)	8
Doctor/other health workers/health facility	1
During training/material	2
Advice given by LHWs to mothers and care givers about immunization of their children	*(n=41)*
Illness protection	22

Indicator	Number of LHWs
Important to immunize	19
Get vaccination form birth	1
Always complete course	1
Information provide by LHWs to mothers/care givers about immunization (multiple responses recorded)	*(n=41)*
Importance and benefit	1
Schedule/follow schedule/ follow rules	38
Nothing	3
Main reasons as reported by LHWs for some children not being immunized (multiple responses recorded)	*(n=41)*
Carelessness	19
Don't have time/no one to take	2
Facility too far	2
Fear of side effects	7
Lack of awareness	13
Wait for mobile team/team does not come	1
Family problem/migration	2
Suggestions to help ensure that all children get immunized (multiple responses recorded)	*(n=41)*
Mobile teams	14
Facility nearby/transport	6
Provide information/awareness	29
Mare staff/vaccinators/train LHWs	1
Ensure vaccine availability/generator/electricity	1
Knowledge and practices about childhood diarrhea	
LHWs mentioning at least one correct reasons for diarrhoea among children 0-5 years	40/41
LHWs thinking that child should be given more fluids than usual during diarhoea	31/41
LHWs thinking that child should be given more or same amount of food than usual during diarhoea	39/41
Advice given by LHWs to the mothers about preventing diarrhea in children (multiple responses recorded)	*(n=41)*
No advice/don't know	2
Hygiene/cleanliness	37
Nutrition/food	6
More fluids/ORS	2
Advice given by LHWs to the mothers about treating diarrhea in children (multiple responses recorded)	*(n=41)*
Hygiene/cleanliness	5
Nutrition/food	10
More fluids/ORS	41
Contact doctor	11
LHWs thinking that children suffering from diarrhea should be given anti-diarrhoeal drugs	26/41
Knowledge and practices about childhood Acute Respiratory Infections (ARI)	
LHWs telling mother at least one correct information about ARI recognition	38/41
Advice given by LHWs to the mothers about treating a child with ARI (multiple responses recorded)	*(n=41)*
Take to Doctor	25
Protect form coldness	6
Provide medicine (co-trimoxazol/paraceutamol syrup)	32
Contact Doctor	3
Give eggs and honey/ hot foods	1

Annex 7. Main themes from community focus group discussions

Theme	Male	Female
Total number of focus groups	**22**	**22**
Urban	6	6
Rural	16	16
Most important problem in relation to child health in the community		
No problem	0	3
Lack of staff/bad behaviour of staff at health facility	4	11
Lack of medicines at the health facility	4	3
Poor services/management at the health facility	1	4
Expensive/extra payments at the health facility	3	1
Health facility too far/difficult access	11	13
Poor sanitation/unhygienic conditions in the community	16	13
Lack/poor quality of drinking water in the community	12	7
Specific diseases such as malaria/diarrhoea/ARI/skin diseases	2	12
Group agreed that children seem to get more diarrhoea if their family does not use a latrine	19/22	16/22
Suggestions for helping households to install and use latrines		
Government should help	11	13
Financial/material technical support to communities from outside	17	18
Raise awareness about importance benefits of latrines	8	4
Self help/already have latrine	2	7
Provide water supply/sewerage system	7	1
What can people in the community do install and use latrines?		
Can't do anything	19	19
Collective effort/self help	6	1
Make each other aware about importance/benefits	5	0
Collect funds/contributions within community	4	10
Provide material/labour	0	1
What can be done by the government to help communities install and use latrines?		
Govt. does not help	1	3
Financial/material/technical help	17	22
Construct latrines for us	15	8
Create awareness	4	1
Provide sewerage/water supply system	6	2
Create economic opportunities/employment	3	3
Reasons for mothers to give extra fluid to children during diarrhoea		
To avoid dehydration/ deficiency of water in the child	22	22
Child may die if water is not given	4	3
That’s the only thing needed to manage diarrhoea/we won’t have to go to the doctor	2	0
Child thirsty/ demands water frequently	0	2
They are aware about the importance of giving extra fluid during diarrhoea	4	0
Reasons for mothers who don’t give extra fluid to the chills during diarrhoea		
Due to lack of awareness / illiteracy	21	15
Mothers don’t have time to think about it	2	7
Misconception about giving extra fluid during diarrhoea	6	13
Due to bad quality of drinking water	0	0
Such mothers are careless	4	19
Due to lack of awareness / illiteracy	0	0
Best person in the community to convince mothers about giving extra fluid to the child during diarrhoea		
No one in the community/only God can convince	0	0
Doctor/health department	6	11
Community leader/influential/Pesh Imam	15	5
Parents/family members	11	12
NGOs/social workers/teams from outside	4	4

Theme	Male	Female
Community women to each other	1	7
LHW	15	10
Other ways to convey such messages to mothers		
Pesh Imam in Friday sermon/prayers	3	4
Media/poster/pamphlet	23	14
Community meetings/events	3	1
NGOs/Social workers/trained community members/teachers/teams from outside	6	7
Through doctors and health workers	13	19
Community centres from info	1	0
Suggestions for improving household environment to prevent children's exposure to smoke from fuel and smoking		
Kitchen should be made away from the place of sitting/sleeping in home	8	16
Alternative fuels - If gas is made available then there would be no smoke	17	16
Smoking of cigarettes should not be done inside home	22	20
Cooking should be done when children were in school or not at home	1	1
Outlets to exit smoke out of kitchen/home	10	15
Create awareness about proper ventilation and hazards of smoky environment	6	2
What can householders and people in the community do improve household environment?		
Nothing	18	16
Form committee to create awareness	5	3
Separate cooking area/keep children away from cooking area	6	18
Use gas/alternate fuel with less smoke	5	6
Control smoking	8	12
Proper ventilation for smoke exit from kitchen/house	12	8
What can be done by the government/ NGOs to help communities for improving household environment?		
Nothing	7	4
Provide gas	21	19
Awareness about hazards of smoking	10	6
Legislation to Ban smoking	17	17
Provide funds to construct separate kitchen/cooking area, ventilation	35	29
Reasons why children were not taken anywhere for treatment of ARI		
Poverty/too many children	20	22
Facility too far/No transport	9	11
No doctor/Bad behaviour of doctor	11	2
Medicines not available/poor quality of medicines	9	6
Lack of awareness/misconceptions/tradition/self medication	7	1
Careless/ignorant	4	5
Suggestions to encouraged /support parents so that they take their children to a health facility for treatment of ARI		
More/free/good quality medicines	15	18
Financial support/employment/control price	3	10
Health facility nearby/better roads	14	14
Awareness among people	6	2
Doctors available/better behaviour of doctors	10	7
Focus groups who parents who don't immunise fully understand the risk that they are taking	9/22	1/22
Reasons for those who don't understand the risk from not having their children immunized		
Illiteracy/lack of education	20	19
Don't take measles as a serious disease	3	2
No info about the risk/no one comes to tell	4	1
People ignorant/careless	3	12
Reasons for those who understand the risk, but still are unable to get their children immunized		
Lack/poor immunization services/no mobile team	9	3
No transport/roads	0	2
Poverty	2	3
Carelessness/no tradition/women not allowed	17	20

Theme	Male	Female
Misconceptions about vaccination/fear of side effects/family planning	6	14
No time to take child for vaccination	4	5
Suggestions to help parents to have their children immunized		
Nothing would help/no need	0	1
Send mobile vaccination teams	15	19
Better access to health facility/nearby/transport/employment	4	5
More staff at health facility	0	4
Create awareness about immunization	25	14
More vaccines/use of disposable syringe/stop corruption	1	2