
Lady Health Worker Programme, Pakistan

Performance Evaluation

Evaluation Report

Conducted for UNICEF and the Ministry of National Health Services,
Regulations and Coordination

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Regulation, and Coordination

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Executive summary

This document is the draft report for the Performance Evaluation of the Lady Health Worker Programme (LHWP). It is based on a methodology set out in the Inception Report and draws on evidence provided through reports on Evaluation Research Activities (ERA) undertaken by the Evaluation Team. This draft report will be finalised in response to comments received.

Overview of the LHWP

The LHWP's purpose is to ensure the provision of primary, preventative, promotive, and curative care services mainly in marginalised remote rural and urban slum communities, with the main objective of providing these services at the community level, particularly for women and children. Through almost 90,000 Lady Health Workers (LHWs), a population of approximately 115 million, women, men, and children who would otherwise lack access to health services are provided with Primary Health Care (PHC).

Following 15 months of training, an LHW is expected to be capable of delivering PHC services, with a focus on Reproductive, Maternal, Newborn and Child Health (RMNCH), serving a population of up to 1,500 residents whose households she is expected to visit once a month. Job descriptions for LHWs have diverged across the provinces since the devolution of the health mandate from the federal to provincial level, but core functions include:

- acting as a liaison between the community and the formal health system;
- promoting the uptake of family planning, including providing contraception;
- disseminating education messages, including for health, nutrition, and sanitation;
- promoting and undertaking the immunisation of children;
- preventing and treating common ailments;
- undertaking nutritional interventions, including growth monitoring and anaemia control;
- providing antenatal, natal, and postnatal care;
- referring clients to nearby health facilities, as well as Community Midwives (CMWs); and
- engaging in other programming since devolution – in particular, polio programming.

The context of LHWP implementation

In a context of low per capita public expenditure on health, low healthcare professional to population ratios, and particularly deprived rural populations, the LHWP plays a key role in strengthening the PHC system as well as achieving Universal Health Care (UHC). It does this by: (1) providing basic services and health information (with a focus on family planning, MNCH, and nutrition); (2) playing a key role in the referral

mechanism to nearby frontline healthcare facilities; and (3) increasing the uptake of public health initiatives, such as the Expanded Programme on Immunization (EPI).

The importance of the LHWP in the Pakistan healthcare system is reflected in National Vision Action Planning documents,¹ which cite the central role of LHWs in improving access to and the quality of Reproductive, Maternal, Newborn, Child, Health and Nutrition (RMNCH) primary care with community-based services to ensure the continuum of care in rural districts and urban slums, as well as in overcoming financial barriers to care-seeking and intervention uptake.

Following devolution, the responsibility for the strategic planning, implementation, and financing of the LHWP has transferred to the provinces. The federal level retains responsibility for funding the LHWP in Azad Jammu and Kashmir (AJK), Gilgit Baltistan (GB), and Islamabad Capital Territory (ICT), as well as for playing a coordination role for the LHWP across the provinces. The other major change since devolution has been the regularisation of LHWs; this moved programme staff onto established government pay scales and led to dramatically increased salary expenditure requirements.

Evaluation approach

The Terms of Reference (ToR) define the objectives of the Evaluation as the following:

- providing the Ministry of National Health Services, Regulations and Coordination (M/o NHSR&C), Departments of Health (DOHs), and other stakeholders with accurate, credible, and usable information on the performance of the LHWP under the changing context;
- examining changes in the programme performance since the Fourth Evaluation in 2008–09 and the devolution in 2011 against the Development Assistance Committee (DAC) criteria for evaluation;
- exploring the determinants of this performance (internal and external, such as the enabling environment) and the system support;
- reviewing and assessing the benefits of LHWP received by the entire health system in various ways, especially where the LHWs are used by various stakeholders for supporting their programmatic objectives;
- documenting the socio-economic benefits to the LHWs and Lady Health Supervisors (LHS), their families and communities of working with the programme; and
- providing analysis and recommendations on how to further strengthen the programme's performance.

Evaluation methodology

The Evaluation follows a theory-based evaluation approach based on an explicit formulation of a Theory of Change (ToC) for the LHWP (which has not been produced before). The ToC is used to test the extent to which the key links in the causal chain by which the LHWP generates results have held, as well as investigating the contextual factors that influence these links. The Evaluation has followed a Realist Evaluation

¹ Government of Pakistan (2016) *National Vision 2016-2025 for coordinated priority actions to address challenges of reproductive, maternal, newborn, child, adolescent health and nutrition*. M/o NHSR&C.

perspective that focuses on understanding variations in performance, particularly those relating to differences in policy and resourcing decisions over time, between regions, and in different contexts.

A set of evaluation questions (EQs) was developed from suggested questions in the ToR based around the Organisation for Economic Co-operation and Development (OECD/DAC) evaluation criteria of relevance, effectiveness, efficiency, impact, and sustainability. These were revised following consultations with the Evaluation Steering Committee and the Technical Working Group. EQs are articulated in this Evaluation's specifically devised matrix. The evidence to answer the EQs has been obtained through a set of discrete ERAs, which included literature reviews, key informant interviews (KIIs) at federal and provincial levels, qualitative research, and quantitative analysis of secondary data and the LHW Management Information System (MIS).

Findings

What follows is a summary of the Evaluation findings, organised according to United Nations/OECD/DAC evaluation criteria.

Relevance

EQ A1: To what extent does the programme address the needs, priorities, and rights of marginalised and vulnerable children, women and men in programme areas? Where the LHWP is operating, it does generally address the needs of marginalised and vulnerable women and children. However, the extent to which it does is compromised across all regions by: (i) the lack of an explicit focus on geographical areas and socio-economic groups with the greatest need; (ii) an increasing focus on immunisation relative to other health, health education, and nutrition needs; and (iii) management and resourcing problems.

EQ A2: To what extent is the LHWP an appropriate instrument to achieve the national and provincial RMNCH objectives? The LHWP plays a central role in Reproductive, Maternal, Newborn, and Child Health (RMNCH) policy across all regions. Stakeholders both within and outside the government consider it a highly effective and appropriate instrument when it is appropriately resourced and managed.

EQ A3: Are the federal and provincial roles in LHWP clear and appropriate and how have they changed since devolution? While in principle there is considered to be a federal level role in coordination, information sharing, and oversight, across regions this is not being fulfilled, and was not fulfilled even while federal funding continued. Federal funding, known as Public Sector Development Programme (PSDP), has now ended, with the exception of funding for AJK, GB, and ICT. This situation was regarded as appropriate by government stakeholders in Punjab. Most stakeholders elsewhere considered there was an unfulfilled role in information sharing and learning.

EQ A4: To what extent has the selection of areas for the LHWP implementation been appropriate to achieve the stated objectives? In none of the regions was there a systematic and evidence-based approach to the selection of areas for LHWP implementation in relation to health needs. The selection of areas is currently found to

be determined by proximity to where LHWs have already operated, where qualified LHWs can be recruited, or where access is relatively easy; there is also politically driven recruitment. This is likely to have generated a sub-optimal selection of areas in relation to need and potential across all regions.

Effectiveness

EQ B1a: To what extent has the programme achieved its objectives/outcomes?

PC-Is and Health Sector Strategy Documents articulate explicit health outcome targets for the LHWP. Specific targets across the regions of Pakistan have diverged since devolution following the 18th Amendment. A review of performance against health outcome targets presents a picture of mixed achievement across the various health outcome domains and across the regions of Pakistan. Performance against the Family Planning and Infant and Young Child Care targets, with a few exceptions, demonstrated particularly poor performance. On the other hand, performance against the Maternal Health Care domain was more encouraging. This Evaluation reports declining numbers of LHWs in almost all regions of Pakistan, which has led to decline in coverage in some regions of Pakistan, with no region of the country having met its population coverage target. The LHWP also sets targets for supervision tracked through the LHS to LHW; we find that most regions of Pakistan meet targets, with the exception of Sindh and Khyber Pakhtunkhwa (KP). However, the degree to which supervision happens is limited substantially by the availability of funds for transport.

EQ B1b: What were the major factors influencing the extent to which objectives/outcomes were achieved? There are a number of significant and systemic challenges faced by the LHWP that limit its ability to meet its health outcome targets and programme objectives. These include: a freeze on recruitment following the regularisation of LHWs; increased LHW responsibilities beyond core functions (in particular, polio programming); significant funding deficits, which have created shortages of supplies and equipment; and a significant reduction in the regularity of training received by LHWs.

EQ B2: To what extent does the LHW work, for whom, where, and in what respects? The LHWP has generally worked for those women and children that it has reached, provided that resources have been available, especially for family planning, some aspects of maternal care, and polio immunisation. In Sindh and GB, and to some extent in Punjab the LHWP is reaching marginalised areas, but this is not the case elsewhere. The incomplete and unsystematic geographic coverage of the programme means that significant numbers of high priority areas are not served in all regions of Pakistan.

EQ B3: What are the main features of the intervention towards the realisation of Human Rights and Gender Equality? The LHWP was not conceived with an explicit Human Rights and Gender Equality (HR&GE) approach to its design or implementation. However, the LHWP does seek to support the desire to achieve UHC through the delivery of doorstep PHC, as well as to address the specific health needs of women and children. Moreover, this Evaluation finds evidence that the LHWP is supportive of the empowerment of LHWs and LHS.

EQ B4: How effectively have various government programmes and departments who use LHWs to achieve their sectoral objectives co-ordinated with each other?

The LHWP has been formally integrated into broader health programmes in KP and Punjab but in both cases this process is incomplete in effective management terms. Coordination was considered by stakeholders to be effective in AJK, but in all other regions significant coordination problems were noted.

Efficiency

EQ C4: How well have resources, both human and financial, been managed to ensure the timely, cost-effective, and efficient attainment of results? All regions have encountered significant human resource and financial management problems. These were in part attributed to the regularisation process, in particular its impact on costs, leading to salary delays, lack of non-salary resources, and increased resorting to strike action (including demonstrations and sit-ins) by LHWs as a result of a number of factors, including non-payment of salaries. However, human and financial resources even with these constraints have not been optimally managed or deployed.

EQ C2: To what extent can costs incurred be justified by the results achieved?

Total expenditure per LHW has seen a dramatic increase since the regularisation of LHWs. This Evaluation finds no evidence that this extra expenditure per LHW has been accompanied by increases in coverage, performance, or impact on long-term health outcomes.

EQ C3: Has the programme been appropriately funded, and how does this vary between provinces? In KP, Punjab and Sindh, the LHWP is now appropriately resourced in terms of the funds budgeted, as provincial contributions have increased to offset former federal contributions. Before this, significant funding constraints existed across all regions. Fund releases have been timely since provinces took over funding in Punjab, Sindh, and Balochistan, but not in KP. Funding problems continue in the territories.

EQ C4: To what extent are management systems functioning well in support of effective LHW performance? The Evaluation finds a number of systematic issues with the functioning of management systems, including:

Planning – this suffers from a lack of effective implementation strategies, risk analysis, and mitigation, and lacks a firm grounding in evidence.

Monitoring and Evaluation – effective quality control mechanisms in the LHWP Management Information System (LHW-MIS) are lacking across most regions. LHW-MIS data does not appear to be used systematically to inform programme strategies in any region.

Supplies and equipment – the lack of a harmonised Logistics Management Information System (LMIS) for all LHWP supplies severely limits the ability of the LHWP to adequately plan for the distribution of supplies.

Recruitment and motivation – regularisation is generally reported to have initially improved LHW motivation, but labour action has increased, particularly following delays in implementing new service arrangements, and in salary payments.

Supervision – the lack of non-salary resources has contributed to a weakening in effective supervision.

Capacity-building – training has generally been sporadic and dependent on donor-funded support. Only in Punjab and KP have LHWP-supported refresher trainings occurred since devolution.

Financial management – delays in the release of PSDP funds have increased following regularisation, contributing to significant problems of financial management, especially over the period 2012–17 (including the accrual of salary arrears).

EQ C5: How has LHWP implementation affected the mechanisms determining LHW performance? Three mechanisms determine the ability of an LHW to effectively deliver a high quality of care to the communities in which she works. She must possess practical, relevant, and accurate knowledge to perform their roles. To foster a high level of client engagement, LHWs must feel free to operate within, be accepted and trusted by, and be accountable to the communities in which they serve. LHWs must be motivated through adequate support, incentives, and governance and accountability frameworks. To a large degree, the current implementation of the LHWP systems is not supportive of the functioning of these mechanisms. Regular training is not held to allow a LHW to have the necessary knowledge to perform her role; regular stock-outs of key medicines and supplies mean that a LHW does not have the necessary tools to fully engage with her clients; and the lack of non-salary expenditure has reduced the effectiveness of monitoring and supervision systems that allow the LHWP to support LHWs.

EQ C6: What mechanisms are in place to facilitate learning, and how has the LHWP made use of this learning to adapt programming? No evidence was found in any region, with the exception of Punjab, of any attempts to systematically use MIS data, or to evaluate, support, or use research on the LHWP to learn lessons to improve performance. There was also no sharing of evidence across the provinces, and the practice of holding quarterly review meetings between the provinces and federal level had been suspended.

EQ C7: Is there a process for managing risk, and to what extent has this been successful in identifying and mitigating risk? In some regions, the programme planning document (PC-I) does provide some analysis of risk. However, none of the regions has or has been implementing a risk mitigation strategy.

Impact

EQ D1: To what extent has the programme contributed to the long-term health outcomes of the LHWP, especially of women and children? Despite the clear challenges faced by the LHWP, we find that the LHWP continues to have an impact on the long-term health outcomes of the population it reaches. Three domains of

healthcare are explored: family planning; maternal care; and infant and young child care. We find the strongest impacts in family planning and maternal care. We find little impact on infant and young child care (including immunisation rates), though a positive impact on polio is an exception, reflecting a diversion of resources to this area. Although we find that the LHWP misses many marginalised communities, the impact of the LHWP is strongest for the poorer households that it does reach. In comparison to the Fourth Evaluation of the LHWP, the overall level of impact has declined, with the programme no longer having an impact on the proportion of children aged 12–23 months who are fully vaccinated.

EQ D2: To what extent has the programme contributed to the empowerment of LHWs and LHSs? The LHWP has greatly contributed to the empowerment of LHWs and LHSs through three main channels: greater social status and recognition within their communities; greater job security following regularisation; and greater knowledge through training sessions where they have occurred. However, there are threats to this progress, emanating from shortfalls in the implementation of the LHWP.

Sustainability

EQ E1: To what extent is there effective political will and stakeholder commitment at national and provincial level for continuing the LHWP?

Governments in all regions have expressed strong and continuing support for the LHWP; it is also seen as valuable by non-government stakeholders. There is evidence of continuing effective political commitment where provinces have taken over funding of the LHWP, and have announced plans to increase coverage. However, this has been accompanied by a lack of strong political engagement to ensure effective programme management.

EQ E2: To what extent is the LHWP affordable within the resources available for the sector? While there have been improvements in the ability of the LHWP to fund current levels of expenditure, the current allocations of expenditure are heavily skewed towards the payment of salaries. Key functions necessary for the effective delivery of the LHWP remain underfunded, particularly as they relate to training, supervision, logistics, and monitoring.

Implications of findings for LHWP performance

These findings suggest the following requirements for improving the performance and impact of the LHWP:

1. the provision of sufficient non-salary funding to ensure that LHWs and LHSs are adequately resourced to perform their roles (in terms of availability of supplies, training, and logistics support);
2. the development and application of evidence-based criteria to determine the priority areas and clients to be targeted to maximise the impact of the LHWP relative to the level of resources provided;
3. greater political focus on ensuring effective LHWP implementation, as part of broader strategies to achieve RMNCH and related objectives;

4. the strengthening of monitoring systems, including effective quality control, and the systematic use of monitoring information to review and compare performance (including across regions) and to inform LHWP management;
5. the implementation of regular training around an appropriate curriculum for the LHW role as it has developed in each region;
6. addressing outstanding issues about the service structure and recruitment criteria, and implementing more effective and gender-responsive human resource management, including to overcome labour relations problems;
7. encouraging sharing and coordination between regions where this is feasible and seen as providing mutual benefits – this could include monitoring approaches and systems, training, lesson sharing, and logistics planning, and may involve an explicit federal role, or could be done between regions on their own initiative;
8. the implementation of integrated approach to RMNCH, provided it is adequately funded and well-managed; and
9. a strengthening of effective accountability to the ultimate beneficiaries of the programme.

Recommendations

Recommendation	Discussion	Relevant stakeholders	Timeframe
Resolve funding issues for AJK, GB, and ICT	<p>AJK, GB, and ICT are dependent on funding through the PSDP in the M/o NHR&C budget. However, both have experienced severe delays in the release of PSDP funds; this have compounded the pressure on programme finances resulting from regularisation.</p> <p>Looking forward, the current cost structure across all of the territories under federal responsibility does not appear to be appropriate for future budgeting. Costs are heavily skewed towards salary costs, and do not provide sufficient resources to enable LHWs to be effectively managed, supervised, and resourced. There is a need to comprehensively map resource requirements on a set of clearly defined criteria that match the need for the current complement of LHWs, LHSSs, and other programme staff.</p>	M/o NHR&C, Ministry of Finance	Immediate
Provide short-term federal finance for funding gaps	<p>There is a case for the provision of additional short-term federal finance to those regions (including provinces) that want to draw on it. Current cost structures across the provinces are heavily skewed towards salary costs at the expense of resources that enable an LHW to perform effectively. Short-term federal funding could allow for provinces to bridge temporary funding gaps, and allow space for the provinces to move towards a more appropriate cost structure.</p> <p>Any short-term federal funding should be strictly defined by the funding gap that it is attempting to resolve, whether for training, drugs and equipment, logistics support, or adequately controlled LHW-MIS data. It should be directly tied to achieving specifically defined enhanced results that sustainably strengthen systems weakened by a long period of underfunding. This short-</p>	M/o NHR&C	One year

Recommendation	Discussion	Relevant stakeholders	Timeframe
	term financing would therefore require the development of an appropriate results and management framework.		
Strengthen capacity to support coordination and use of evidence	<p>In all provinces, with the exception of Punjab, stakeholders called for an enhanced role of the federal level in the analysis and use of evidence to inform policy making and management. This reflects a general lack of capacity at the provincial level to fulfil this role. However, this enhanced role needs to be linked to evidence of the capacity to deliver this function. The establishment and adequate funding of the Health Planning, System Strengthening, and Information Analysis Unit (HSPIU) is a positive step in this direction, enhancing the ability of the federal level to provide relevant programme implementation and policy data analysis; however, it should be accompanied by a revitalisation of the practice of quarterly review meetings with the provinces.</p> <p>The M/o NHR&C could also consider the establishment of an inter-provincial forum for LHWP programme managers to encourage sharing and coordination between regions where this is feasible and seen as providing mutual benefits. This could include monitoring approaches and systems, training, lesson sharing, and logistics planning.</p>	M/o NHR&C	One year
Provide provinces with support in strategic planning	Where acceptable to the provinces, this will help to align the implementation of the LHWP, other vertical programmes and provincial health systems to National Vision Action Plans and to support a concerted effort towards the provision of UHC.	M/o NHR&C	One year
Enhance political engagement, supported by maintaining the LHWP as a recurring agenda item on intra-ministerial meetings	<p>In order to support the enhanced governance and accountability of the programme, the LHWP could be maintained as a recurring agenda item on intra-ministerial meetings chaired by Minister NHR&C.</p> <p>This should be supported by the provision of evidence against the key performance indicators of the LHWP, in order to track progress over time.</p>	M/o NHR&C	Immediate
Support provinces to allow for a unified LHW-MIS	In order to allow for data which is comparable across regions and can be used for regional and national level planning.	M/o NHR&C	Three years
Review LHWP funding and budgeting	<p>As LHWP funding across the provinces continues to stabilise now that the provinces have assumed full financial responsibility for the funding of the LHWP, there is an urgent need to review the programme's cost structure. The current cost structure does not appear to be appropriate for future budgeting, nor supportive of sustaining an appropriate level of service provision by LHWs.</p> <p>As a result, there is a need to develop and implement financing strategies to achieve a sustainable level of non-salary funding for LHWs so that they can be</p>	Provincial governments in all provinces	Immediate

Recommendation	Discussion	Relevant stakeholders	Timeframe
	<p>effectively managed, supervised, and resourced. This Evaluation has produced an indication of the increased level of non-salary expenditure required. However, there is a need to comprehensively map resource requirements on a set of clearly defined criteria; these should match the need for the current complement of LHWs, LHSs, and other programme staff.</p> <p>Achieving an appropriate cost structure for the LHWP is the most pressing need for the programme across the provinces, and the ability of the provinces to respond to any further recommendations presented in this report is limited by this constraint.</p>		
Limit expansion of the programme until an appropriate cost structure is in place	<p>Across the provinces the LHWP should limit expansion into unserved areas until it has achieved an appropriate cost structure that provides LHWs with the resources that they need to effectively deliver high-quality health services to their communities.</p> <p>Expansion of the programme under current funding constraints, and with the current insufficient levels of non-salary expenditure, risks further undermining the ability of an LHW to perform effectively and provide an adequate level of care.</p>	LHWP programme managers in all provinces	Immediate
Expand LHWP to priority areas based on evidence	LHWP impact can be enhanced by expansion into areas of greatest need (as defined by marginalisation and health need). Evidence on current practice suggests that programme expansion occurs based on ease of expansion, with the programme expanding to unserved areas in proximity to served areas. This approach should be replaced by an assessment of health needs and the adequacy of the supporting health system to meet this need.	LHWP programme managers in all provinces	Three years
Adopt an integrated approach to RMNCH, nutrition, immunisation, WASH, and health education	<p>KP and Punjab have both adopted an integrated approach to RMNCH, Nutrition, Immunisation, WASH, and health education. While the final effectiveness of this approach is yet to be determined, and has been undermined by on-going constraints to non-salary funding, there is positive evidence that this has contributed to improved inter-department coordination between those responsible for managing the delivery of RMNCH, nutrition, and immunisation programming.</p> <p>Ultimately, an integrated approach to the delivery of RMNCH, nutrition, and immunisation programming is more likely to provide a more cost-effective and coherent approach than the maintenance of the vertical structures. However, other provinces should learn from the experience of implementation in Punjab and KP. In particular, there is a need to carefully articulate the roles and performance management of the various cadres of frontline staff involved, including LHWs, CMWs, as well as staff at the People's Primary Healthcare Initiative (PPHI), to discourage competition and encourage collaboration.</p> <p>Roles, responsibilities, and caseloads for the various frontline cadres should be carefully mapped to the</p>	Department of Health in Sindh, Balochistan, AJK, GB, ICT	Three years

Recommendation	Discussion	Relevant stakeholders	Timeframe
	capabilities and capacities of each cadre to ensure that no cadre is overburdened.		
Strengthen systems	<p>There are a number of key and poorly performing systems that are common across all provinces that should be addressed; these include the procurement of medicines and supplies, and the process for dealing with poor performance of LHWs.</p> <ul style="list-style-type: none"> The procurement process is not well managed. Other provinces should learn from the experience of Punjab and move away from a system of assigning resources based on a quota system. As in Punjab, provinces should consider the procurement and distribution of supplies on the basis of need. In all provinces, this would be supported by the development of an integrated logistics MIS that can accurately track resources and resource needs. The LHWP currently does not have an effective process for dealing with cases of non-performance or non-willingness to work. This needs to be addressed so that non-performing LHWs can be terminated efficiently. Capacity-building and training is not occurring in Sindh and Balochistan. While Sindh has updated its curriculum, both provinces need to revitalise the process of refresher training. Knowledge is a key mechanism in the ability of an LHW to perform effectively, and the continued lack of refresher training will undermine this. <p>The programme across all provinces has a deficit of functioning vehicles; this needs to be addressed as it greatly hinders the ability of LHSs to provide adequate supervision.</p>	LHWP programme managers in all provinces	One year
Strengthen governance and management	<p>Looking forward, there are a number of issues that programme managers need to address that will be supportive of increasing the effectiveness of the programme:</p> <ul style="list-style-type: none"> Enhancing accountability needs to be addressed in all provinces. To support this, there will need to be a strengthening of the programme's monitoring and the provision of management information. There needs to be a more systematic reporting of both operational and health outcome targets to allow programme managers to quickly respond to changing circumstances. There is a deficit in accountability in all provinces to the ultimate beneficiaries and clients of the programme. This could be remedied by giving further responsibilities to district management. This step would require accountability mechanisms to be developed 	LHWP programme managers in all provinces	One year

Recommendation	Discussion	Relevant stakeholders	Timeframe
	<p>and implemented at that level to monitor performance.</p> <p>Risk mitigation strategies should be developed and implemented. While some provinces have identified risks to programme delivery, no province has developed or implemented any risk mitigation strategy.</p>		

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List of abbreviations

AJK	Azad Jammu and Kashmir
ANC	Antenatal Care
BHU	Basic Health Unit
CCI	Council of Common Interest
CEM	Coarsened Exact Matching
CPR	Contraceptive Prevalence Rate
CMO	Context-Mechanism-Outcome
CMW	Community Midwife
DAC	Development Assistance Committee
DHO	District Health Officer
DHS	Demographic Health Survey (Pakistan)
DOH	Department of Health
EMONC	Emergency Obstetric and Newborn Care
EPI	Expanded Programme on Immunization
EQ	Evaluation Question
ERA	Evaluation Research Activity
FGD	Focus Group Discussion
FLCF	First Level Care Facility
FPO	Field Programme Officer
GB	Gilgit Baltistan
GDP	Gross Domestic Product
HR&GE	Human Rights and Gender Equality
HSPIU	Health Planning, System Strengthening, and Information Analysis Unit
ICT	Islamabad Capital Territory
IHP	Integrated Health Project

KII	Key Informant Interview
KP	Khyber Pakhtunkhwa
LHS	Lady Health Supervisor
LHV	Lady Health Visitor
LHW	Lady Health Worker
LHWP	Lady Health Worker Programme
LMIS	Logistics Management Information System
MIS	Management Information System
M/o NHR&C	Ministry of National Health Services, Regulations and Coordination
NCD	Non-communicable disease
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
OPM	Oxford Policy Management
PHC	Primary Health Care
PPHI	People's Primary Healthcare Initiative
PSDP	Public Sector Development Programme
PSM	Propensity Score Matching
RMNCH	Reproductive, Maternal, Newborn, and Child Health
ToC	Theory of Change
ToR	Terms of Reference
TT	Tetanus Toxoid
TWG	Technical Working Group
UHC	Universal Health Care
UNEG	United Nations Evaluation Group
UNICEF	United Nations Children's Fund

1 Introduction

1.1 Overview

This document is the draft report for the Evaluation of the LHWP. It is based on the methodology set out in the Inception Report (summarised in Chapter 4) and draws on evidence provided through reports on ERAs undertaken by the Evaluation Team. This draft report will be finalised in response to comments received.

The LHWP was set up to ensure provision of primary, preventative, promotive, and some curative care services at community level, mainly in remote rural and urban slum areas. The main objective of the LHWP is to increase the utilisation of promotive, preventative, and curative services at the community level, particularly for women and children in poor and underserved areas. The last full Evaluation of the LHWP was undertaken in 2009. Past Evaluations have clearly demonstrated the effectiveness of the LHWP as an instrument to achieve RMNCH objectives.

Since then, significant changes in the management of the programme have taken place resulting from the devolution of health services to provincial governments. A key focus of the Evaluation has therefore been to understand how this process of devolution and the consequent partial divergence in LHWP management approaches across regions of the country has affected implementation.

1.2 Evaluation process

The Inception Phase for the Evaluation took place between January and March 2019, and included a review of documentation and information sources, discussions with the Technical Working Group (TWG) for the Evaluation, agreement on the EQs, the formulation of the ToC, and detailed design of the ERAs to provide the evidence base. In addition, two of the ERAs – a review of Health Sector policies and a Literature Review on community health worker programmes – were undertaken during the Inception Phase.

During the research phase of the Evaluation, primary data collection was undertaken through KIIs and focus group discussions; these have provided information for reports on the LHW in each of the four provinces (KP, Punjab, Sindh, and Balochistan), as well as in AJK, GB, and ICT, and at the national level. Qualitative primary data collection was also undertaken at district level, and through interviews with LHWs and their supervisors (LHSs). Secondary data was analysed from the LHW Management Information System (MIS) and other survey sources, notably the Pakistan Demographic and Health Survey (DHS). The main data collection process took place between March and June 2019.

1.3 Evaluation report structure

The remainder of this Evaluation Report is structured as follows. Chapter 2 describes the LHWP as the object of the Evaluation, including the main features of its implementation following devolution, and the programme ToC as it has been developed to guide the Evaluation. Chapter 3 reviews the context of implementation of the LHWP. Chapter 4 describes the purpose, objective, and scope of the Evaluation, as well as summarising the Evaluation methodology. Chapter 5 presents the Findings of the Evaluation – that is, the answers to the EQs. Chapter 6 discusses the conclusions and lessons learned, while Chapter 7 provides recommendations.

Additional information is included in a series of annexes. Annex A contains the ToR for the Evaluation. Annex B provides a description of the process by which the Evaluation developed a ToC for the Evaluation. Annex C provides a list of respondents that were interviewed as part of the provincial and regional studies. Annex D provides the technical details of how performance against health outcome targets was measured. Annex E provides further details of the methodology for qualitative methods used in the Evaluation. **Error! Reference source not found.** provides the technical details of the quantitative approach used to assess the impact of the LHWP on long-term health outcomes.

2 Object of the Evaluation: the LHWP

2.1 Overview

The LHWP was set up to ensure the provision of primary, preventative, promotive, and some curative care services at community level, mainly in remote rural and urban slum areas. The main objective of the LHWP is to increase the utilisation of promotive, preventative, and curative services at the community level, particularly for women and children in poor and underserved areas. The LHWP currently serves a population of 115 million women, children, and men across Pakistan. Total expenditure on the programme in 2017/18 was PKR 24,634 million.

Past Evaluations have clearly demonstrated the effectiveness of the LHWP as an instrument to achieve RMNCH objectives, and indeed as a model internationally for successful community health work initiatives. The last full Evaluation of the LHWP (the Fourth Evaluation) was completed in 2009. Section 2.2 summarises past experience up to the Fourth Evaluation, including recommendations made at that point for strengthening the effectiveness of the programme.

Since the Fourth Evaluation, programme management has been greatly affected by constitutional and legal changes: first, by the devolution of responsibilities to the provinces and the abolition of federal ministries and programmes following the 18th Constitutional Amendment in 2010; and second, by the regularisation of LHW employment status, following a Supreme Court ruling, also in 2010. These changes and their consequences for programme management and implementation arrangements, including divergence across regions, are discussed in Sections 2.3 and 2.4, respectively. Despite these changes and some degree of divergence in the roles and organisation of the LHWP, this Evaluation concluded that the core ToC for the Programme (in the sense of the key mechanisms by which it achieves results, and the factors influencing these mechanisms) has not fundamentally changed over time, nor across regions. Section 2.5 summarises the LHWP ToC and explains how it has been used to guide the Evaluation.

2.2 LHWP origins and past Evaluation findings

2.2.1 Origins and main features

In 1994, Pakistan's Ministry of Health launched the LHWP as part of a national strategy to reduce poverty and improve health by bringing health services to the doorsteps of underserved communities. LHWs are expected to be agents of change within their communities by providing integrated preventative and curative health services to members of their communities, with a specific focus on family planning, nutrition, immunisation, and MNCH. Box 1 describes the LHW role prior to devolution.

Box 1: The LHW²

An LHW will register approximately 200 households or 1,000 clients in her community, to whom she will offer a range of preventative and promotive services, including family planning. Every working day, she will visit five to seven households, and she will ensure a re-visit every month. She should be able to treat simple illnesses and refer cases to the nearest health centres in accordance with provided guidelines. The LHW's services are free at the point of delivery.

The LHW will be female, preferably married, and a permanent resident of the area for which she is recruited. She should have a minimum of eight years' schooling, and preferably a matriculate. The LHW should be between 20 and 50 years old, although between 18 and 20 years old is acceptable if she is married. Her residence will be designated a *health house*. The training of LHWs will be provided by health department staff working at the health facility where she was recruited. LHWs will attend 15 days' refresher training annually. The LHWP will supply LHWs with a basic kit of essential drugs and contraceptives, and replenish her kit on a monthly basis through the health facility.

Following her 15 months training period, an LHW is expected to be capable of delivering PHC services and carrying out MNCH services, such as antenatal care (ANC), advice on natal and post-natal services, increased coverage of immunisation, promotion of health education, promotion of nutrition and basic sanitation, and the treatment of common diseases and injuries.

LHSs provide supervision of LHWs, with a ratio of 1 LHS to 25 LHWs. An LHS is provided with a vehicle and driver, and it is expected that an LHS will visit each LHW under her supervision at least twice a month. An LHW and LHS are inspected and supervised by Field Programme Officers (FPO) and the management staff of the Programme Implementation Units at district and provincial levels.

Prior to devolution the LHWP was implemented through the National Programme for Family Planning and Primary Care, and was delivered through the Ministry of Health, with implementation units at the federal, provincial, and district levels (the Federal Programme Implementation Unit, Provincial Programme Implementation Units, and District Programme Implementation Units, respectively). The Secretary of Health, the Planning Commission, and the Ministry of Finance were responsible for monitoring the LHWP. Under the Secretary for Health, the Director General of Health Services, the Deputy Director General of Health, and Planning and Development also assisted in the management of the programme.

The Ministry of Health provided funding for the LHWP and worked in close collaboration with the provincial and area DOHs. Donors provided support to the development of training programmes and vaccination initiatives. Additionally, the UN agencies provided policy and strategic guidance, including support for the development of manuals and training activities, improving supervision and monitoring, and building resource capacity.

² OPM (2009a).

2.2.2 Past Evaluation findings

A series of major Evaluations of the LHWP were undertaken over its first 15 years of implementation. The last of these, the Fourth Evaluation, was undertaken in 2008/09.³ This Evaluation, which was implemented prior to devolution (discussed below), found that the LHWP had a substantial positive impact on some key health indicators, particularly those related to family planning, immunisation, and antenatal and neonatal care, and that these impacts were sustained during a period of significant expansion of the LHWP which the report noted was a considerable achievement. The Evaluation identified two key factors that potentially drove the observed LHWP impact. The first of these was the performance of an LHW in terms of the level to which an LHW was able to deliver all of the services that were required of her, given the size of her registered population and other demands placed on her. The second was an LHW's level of knowledge of the services that she was expected to deliver.

The Fourth Evaluation noted that there were serious weaknesses in the adequate provision of various inputs that hindered an LHW from performing her work, and as a result diminished programme impact. These include: (1) a shortage of medicines that form part of the basic kit of medical supplies; (2) a shortage of equipment included in a LHW's basic kit, including weighing scales and thermometers; and (3) inadequate clinical support services, with a shortage of trained medical staff available at a First Level Care Facility (FLCF), with the Evaluation noting that only 74% of FLCFs had a doctor's post both sanctioned and filled.

The Fourth Evaluation focused on recommendations to ensure that LHWs were supported to ensure that they can effectively deliver the full range of services expected of them:

- The first set of recommendations included establishing effective LHW performance management regimes at the level of district implementation units, with detailed procedures for reporting and sanctioning LHW non-performance. In order to support this, the Evaluation recommended a continued focus on strengthening the MIS, and in particular ensuring that individual LHWs are clear on their role and responsibility in this system to support the accurate collection of data.
- The second set of key recommendations focused on enhancing the knowledge of LHWs in terms of their ability to actually deliver the services that were expected of them. The results suggested that efforts should be made to improve the frequency, focus, and quality of refresher training courses, targeting training on areas where knowledge is found to be insufficient through the programme's own monitoring efforts.

³ Ibid.

2.3 Devolution to the provinces

2.3.1 Implementation of devolution: the federal level

In 2010, Pakistan's 18th Constitutional Amendment was passed. This abolished the concurrent list of functions between the federal and provincial levels of government. As a result, provinces were given complete administrative authorities and 15 federal ministries were abolished, with their functions being devolved to the provinces. In the health sector, the Ministry of Health was abolished and provinces took over the implementation of government vertical programmes in the health sector, such as the LHWP (but excluding programmes such as EPI, and those against AIDS, TB, and malaria, which were supported by the Global Fund), along with the delivery and management of all other health sector activities.

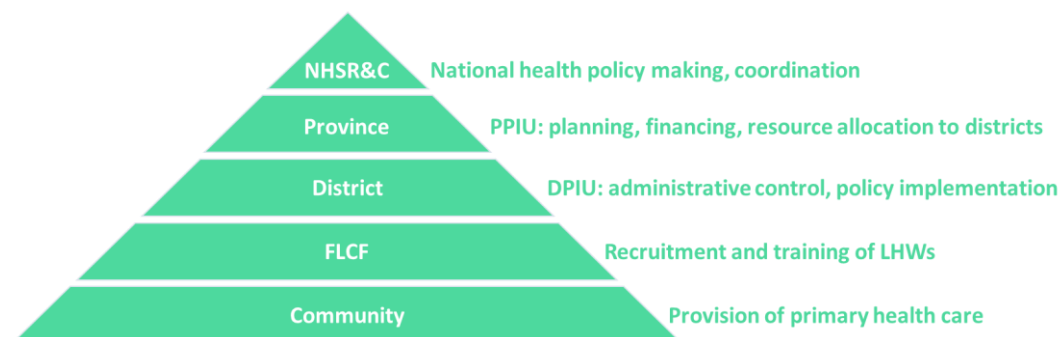
The main features of the implementation of the devolution process at federal level have been the following:

1. Following devolution, it became clear that there was no effective institutional mechanism to ensure the regulation, coordination, and implementation of Pakistan's international health commitments. This led to the reinstatement in 2013 of the M/o NHR&C to provide these functions.
2. To reconnect with the MNCH and LHWP and other programmes, a Health Planning Unit was established as part of the M/o NHR&C to hold regular meetings with all the provinces/regions. An Inter-Ministerial Forum on health issues was established in 2014, to which provincial Health Ministers, and Secretaries of Health, Population and Planning and Development were invited. It was chaired by the Federal Minister for Health. While the Inter-Ministerial Forum at times discussed the LHWP, a dedicated forum for the programme was not established.
3. The federal government ceased providing non-salary funding for the LHWP in 2011. It continued to provide funds for the salaries of the LHWP staff in provinces until fiscal year 2017–18, in line with the decision of the Council of Common Interest (CCI) because of the implications of regularisation (see Section 2.4). Thereafter, provinces have had complete responsibility for funding the LHWP from their own budgets.
4. The federal government has retained responsibilities for funding the LHWP in the regions of Pakistan that are not provinces (i.e. AJK administered as a self-governing territory, the territories of GB and ICT, and the semi-autonomous region of the Federally Administered Tribal Areas up until the latter's incorporation into KP in 2018). Funding for the LHWP in these regions has come from the PSDP within the M/o NHR&C budget, since these regions (unlike the provinces) are not eligible to receive funding through National Finance Commission awards.

5. The M/o NHR&C has established a federal dashboard to provide integrated MIS data across the provinces and regions. Currently, the MIS for each of Sindh, Punjab, and KP are linked with the federal dashboard as only these regions have data online. However, no reporting or analysis of this consolidated data has taken place.
6. The capacity of the M/o NHR&C for data analysis has been strengthened through the establishment of the Health Planning, System Strengthening, and Information Analysis Unit, including with support from USAID, with a view to supporting implementation of the National Health Vision, which is discussed in Chapter 3.

The overall LHWP management model, as envisaged for the LHWP in relation to the federal role following devolution, may be summarised in Figure 1 below. The M/o NHR&C would have responsibility for the delivery of national health sector strategies, the regulatory environment, and coordination. The Provincial Project Implementation Unit would maintain responsibility for the delivery of the LHWP strategy and planning, as well as financing and the allocation of resources to the district level. At the district level, the District Project Implementation Unit would maintain responsibility for the actual implementation of the LHWP, with the Basic Health Unit (BHU) level providing support for the recruitment and training of LHWs (as well as consolidating monthly reporting of LHWs), with LHWs then actually providing PHC services at the community level.

Figure 1 Vision of integrated management of LHWP⁴



However, in practice the high level of autonomy enjoyed by provinces militates against any common management model, to the extent that provinces have decided to develop different approaches. Specifically:

- The M/o NHR&C has no authority and few effective incentives to ensure cooperation from provinces (for instance, in the provision of consistent, quality-controlled information, or the development of common curricula or training programmes).

⁴ Adapted by the authors from Zhu *et al.* (2014) *Lady Health Workers in Pakistan: Improving Access to healthcare for rural women and families*.

-
- The organisational structure of the LHWP is diverging across provinces as a result of decisions about the specific roles and tasks of LHWs, and the organisation of health service provision, including the integration of vertical health programmes. This change has been greatest so far in Punjab and KP. More fundamentally in the longer term, this will also be affected by potential changes to the role and structure of local government – for instance, the abolition of districts, which is planned by the Government of Punjab.

2.3.2 Implementation of devolution: the provinces and territories

With the transfer of responsibility for strategy setting and programme implementation to the provinces, there has been some divergence in the role that the LHWP is seen as playing in achieving RMNCH objectives, its relation to other programmes and activities, and the functions that LHWs are being asked to perform.

In KP, the LHWP was merged with the EPI, the MCNH programme, and the Nutrition Programme as the Integrated Health Project (IHP), headed by a Project Director working through the Project Implementation Unit. At the district level, the IHP is managed by the District Health Officer (DHO), with additional coordination support across districts. The LHWP in the Federally Administered Tribal Areas is being integrated into this structure. There have been no significant changes to the role of the LHW except that health education responsibilities have been expanded to include non-communicable diseases.

In Punjab, maternal, neonatal and child health, family planning and nutrition programming have been consolidated along with the LHWP into the Integrated Reproductive, Maternal, Newborn, and Child Health (IRMNCH) programme. District Coordinators for the integrated programme are responsible for district-level management. LHWs have an expanded role in disease treatment and referral.

In contrast, in both Sindh and Balochistan the LHWP remains as an independent vertical programme under its original name. This is also the case in AJK, GB, and ICT. In each of these regions, the management structures are broadly unchanged since devolution, but it is noted that there is a much stronger emphasis on polio eradication in the allocation of time and resources (especially in Balochistan). Other changes to LHW roles and responsibilities include:

- In AJK, LHWs provide health education encouraging the use of CMWs, and refer their clients to CMWs.
- In GB, expanded roles include involvement in TB direct observation therapy, identification of dengue fever cases, and the provision of injectable contraceptives.
- In Sindh, the revised job description includes more details on disease treatment.

2.4 Regularisation of LHW status

A Supreme Court ruling (dated 7 September 2010) required that the status of the LHWs should be regularised to make them government civil servants. Previously, LHWs had been contracted workers, receiving a monthly stipend, and if an LHW failed to perform to satisfactory levels, their contract could be terminated. In the light of the Supreme Court's regularisation order, and in view of the resulting financial burden on the provinces, the Ministry of Inter-Provincial Coordination submitted a summary to the CCI. Thereafter, CCI decided that the federal government would keep financing the program till 30 June 2017. Pension liabilities would continue to accrue for ten years from the date of the regularisation in line with the decision of the CCI of 23 January 2013. In January 2013, the Council also directed the provincial governments to finalise the necessary legislation regarding their service structure and terms and conditions as soon as possible.⁵ The following have been the main features of the implementation of regularisation:

- In Punjab, Sindh, and Balochistan, the province Health Department issued notifications in February 2013 to regularise the services of LHWs, LHSs, and other associated staff of the National Program of Family Planning and PHC with effect from 1 July 2012. In KP, this was done through legislation passed in 2014. Regularisation moved staff onto established pay scales, but without pension benefits.
- In Punjab and Sindh, it was not until August 2015 that the regularisation orders were implemented, while expenditure for this purpose in Punjab was only sanctioned from July 2017. Thereafter, in Punjab salaries have been being paid through provincial non-development budget. Salary areas were cleared in Sindh in 2018.
- In KP, expenditure was authorised from 2016, but the 2014 Act also stated that there would be no regular staff appointments, so any recruitment would be carried out on a contract basis.
- In AJK, regularisation was announced formally in April 2013, but also not implemented with expenditure authority until fiscal year 2017–18, with the federal government taking responsibility for settling arrears. The programme was also declared a 'dying cadre' (as in Punjab and KP), with posts falling vacant being abolished. In GB, contract recruitment only has been envisaged, but this has not yet taken place. In ICT, a new service structure for LHWs, LHSs, and other staff was approved and notified in 2017.

While regularisation has improved the status and pay of LHWP staff, the implementation of this involved the accrual of salary arrears over several years, which, along with the lack of provision of pensions, created grievances for staff. At the same

⁵ Annual CCI Report, 2012–13.

time, recruitment ceased except where this was done on a contract basis, and under the Tharparker programme in a single district in Sindh.

2.5 LHWP ToC

The ToC developed in the Inception Phase to provide a framework for the Evaluation was guided by the following evidence and considerations:

- Previous Evaluations conclusively established that the LHWP can and has been effective, and also determined the main factors likely to influence LHW effectiveness, though no formal ToC had been developed before.
- While, following devolution, there have been some changes in the details of the LHW role, functions, and organisational arrangements, these have not affected the key factors affected LHW performance and hence the core intervention logic of the LHW role (whether as part of a standalone programme, or an integrated approach to RMNCH).

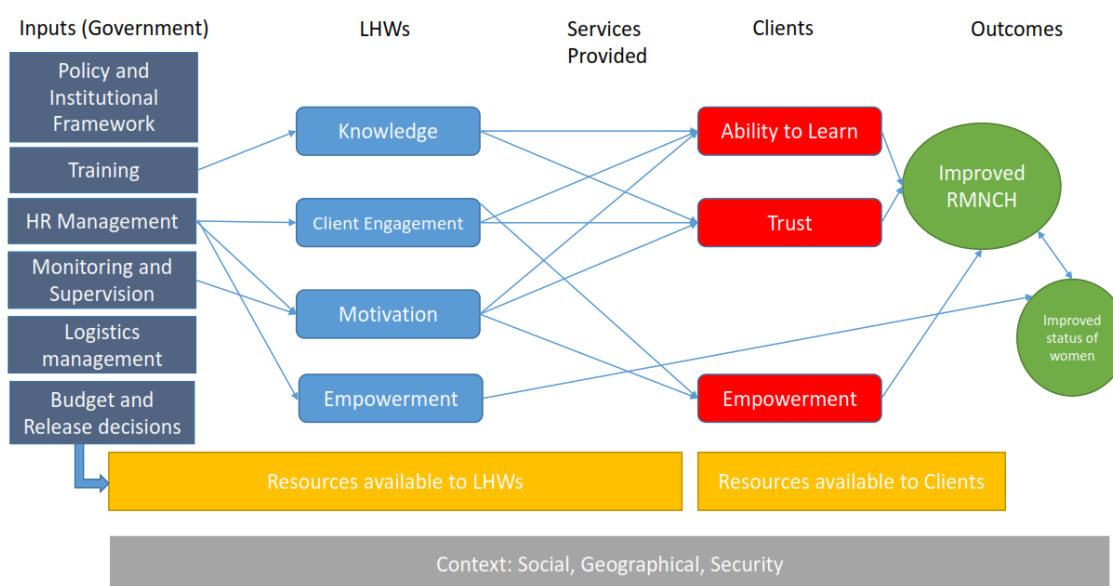
The following approach was therefore used to develop the LHWP ToC:

- A 'Realist Evaluation' perspective was used, focusing on identifying the key mechanisms by which LHWs are effective, and the contextual and policy factors influencing when, where, and how well these mechanisms work.
- Evidence from the Fourth Evaluation as well as from a wider review of literature on Community Health Worker experience in Pakistan and internationally was used to identify and define the key mechanisms, and contextual and policy factors.
- No attempt was made to develop 'province-specific' ToC since the relatively limited changes in roles meant that only in an extremely detailed articulation of the ToC would these differences become apparent, and this would anyway not be helpful for understanding comparative experience, which is a main focus of this Evaluation. It was originally envisaged that more detailed articulations of the RMNCH ToC for each province would be developed, but since it was not the intention of the Evaluation to assess the totality of RMNCH performance in each province, this was also felt not to be informative.
- The approach has therefore been to focus on the common core of the intervention logic of the LHWP that applies across all provinces, with a view to making comparisons of how differences in the context, management, and funding arrangements, and specific roles and tasks of LHWs have affected the performance and results achieved.

The main elements of a Realist Evaluation approach are set out in Annex B.4, including the emphasis on developing a 'Programme Theory' and the testing of how far and under what circumstances the key 'mechanisms' by which LHWs achieve results function effectively. The statement of the Programme Theory, whose validity the Evaluation has tested, is the following:

Lady Health Workers, appropriately selected, trained, supervised, and equipped, provide promotive, preventive, and curative healthcare to individual clients and families (especially women and children) and communities to achieve improved PHC, RMNCH, and nutrition outcomes. They act as agents of change in communities by organising health committees and women's groups. They bridge the gap between families and the Primary Health Care delivery system, through referring clients to Primary Health Care services. They are themselves empowered by their role and experience, and empower women in their communities to obtain appropriate RMNCH and related services.

Figure 2 LHW ToC – adapted version



The diagrammatic representation of the ToC (Figure 2) highlights the key ‘mechanisms’ by which LHWs can be effective in bringing about behaviour change in their clients and the communities that they work with, and in achieving results, as well as the main elements of the context and inputs provided that are likely to influence the extent to which LHWs achieve results in diverse settings and circumstances.

These key mechanisms (identified on the basis of past Evaluation results and the wider review of national and international experience with community health worker programmes) are the following:

- **Knowledge:** LHWs possess practical, relevant, and accurate knowledge that they are able to use to perform their roles.
- **Client engagement:** LHWs feel free to operate within, are accepted and trusted by, and are accountable to, the communities that they serve.
- **Motivation:** LHWs feel supported, incentivised, accountable, and responsible for their work.

-
- **Empowerment:** LHWs feel independent, respected, and confident to influence household and community decisions.

Key aspects of the management arrangements (especially human resource management, training, and monitoring and supervision) impact directly on how effectively and under what circumstances these mechanisms perform. Other management factors – notably logistics management⁶ and budget and spending (fund release) decisions – determine the resources that are available to LHWs to perform their functions.

⁶ Logistics management was introduced as an additional defined policy category in the ToC following regional studies which highlighted its importance.

3 Context of LHWP implementation

This chapter reviews the wider health policy and health outcome context within which the LHWP has been implemented, especially over the period since the Fourth Evaluation and the implementation of devolution. Section 3.1 reviews national health sector policies. Section 3.2 summarises the main features of provincial and other regional health policies. Section 3.3 presents comparative data on public and private expenditure on health. Section 3.4 summarises the main trends in RMNCH indicators in Pakistan at the national level. These are analysed at the provincial level as part of the Evaluation findings on impact.

The context review suggests there is a high level of consensus in Pakistan on the key policy and investment priorities to address RMNCH challenges across provinces, although the extent to which complete, up-to-date, and integrated RMNCH strategies have been articulated and implemented varies across provinces.

Progress has continued to be made across all dimensions of RMNCH indicators at national level, though the rate of progress in relation to family planning is lagging. Public expenditure on health remains low, and out-of-pocket health expenditures high, compared to other countries at a similar stage of development.

3.1 Overview of national health sector policies

Following devolution, the federal government retained responsibility for setting national health priorities and strategies, and for ensuring that the provincial health strategies remained aligned with Pakistan's international commitments. The federal government developed (in consultation with provinces and other stakeholders) a Pakistan Vision 2025 for the country's overall development.⁷

The vision's pillar for Human Development (Health and Population) recognises the following shortcomings in the sector:

- Pakistan's health indicators fall severely short of stated targets.
- Per capita public expenditure on health is very low in Pakistan, with public health spending at less than 1% of gross domestic product (GDP).
- Weak management systems and poor governance have resulted in inefficiencies in the sector.
- Pakistan has one of the lowest ratios of doctors, dentists, and paramedics to head of population in the world.

⁷ Government of Pakistan (2016a).

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- Rural populations remain particularly deprived in relation to health due to a range of issues, including a lack of education and awareness, poor infrastructure, lack of access to health facilities, and poverty.

Recognising these challenges, and recognising a lack of a national consensus for healthcare the M/o NHR&C developed a National Health Vision (2016–2025),⁸ with the vision ‘to improve the health of all Pakistanis, particularly women and children by providing universal access to affordable, quality, essential health services which are delivered through a resilient and responsive health system, capable of attaining the Sustainable Development Goals and fulfilling its other global health responsibilities’.

This vision places specific emphasis on women and children, and as such the M/o NHR&C has also worked with provinces and other agencies to develop a National Vision to address RMNCAH and nutrition.⁹ This document identifies ten priority actions to accelerate improvement in newborn, child, and maternal survival, focusing especially on reducing morbidity and mortality linked to common preventable causes:

1. improving the access and quality of MNCH community-based primary care services, ensuring a continuum of care, including newborn care in rural districts and urban slums;
2. improving quality of care at primary and secondary level care facilities;
3. overcoming financial barriers to care seeking and uptake of interventions;
4. increasing funding and allocation for MNCH;
5. improving reproductive health, including family planning;
6. investing in addressing social determinants of health;
7. taking action at district level;
8. enhancing national accountability and oversight;
9. generating the political will to support MNCH as a key priority within the Sustainable Development Goals; and
10. generating the political will to support RMNCAH as a key priority within the Sustainable Development Goals.

A costed RMNCH Activity Plan, including the identification of 38 priority districts for RMNCH, was also developed (and subsequently updated) through a consultative process.

3.2 Provincial health strategies

Since devolution, the provinces have been given the responsibility for developing province-specific health strategies; these include both strategic objectives and

⁸ Government of Pakistan (2016b).

⁹ Government of Pakistan (2016c).

implementation plans for the delivery of healthcare in the provinces. While there is an expectation that these should be aligned with the National Vision, there is some variation across the provinces. Table 1 provides a summary of the stated objectives found within the health sector strategies at provincial level.

Table 1 Summary of stated objectives from provincial health sector strategies

Province	Stated objectives
Punjab (Health Sector Strategy 2012–20)	<ul style="list-style-type: none"> • Increase proportion of population with access to improved sanitation from 48% to 90% • Reduce infant mortality from 74 to less than 40 per 1,000 live births • Reduce maternal mortality rate from 276 to less than 140 per 1,000 live births
Sindh (Health Sector Strategy 2012–20)	<ul style="list-style-type: none"> • Enhance health outcomes in the province while improving cost efficiency and the quality of service delivery • Enhance stewardship role for DOH for steering the public and private sector towards desired health outcomes • Harmonise the strategy plan with national policies and international commitments while maintaining strong contextual relevance for Sindh • Provide a financial framework for investment by government, private sector, UN agencies, and international partners • Provide a broad monitoring and Evaluation framework for the monitoring of sector strategy by DOH and partners
KP (Health Policy 2018–25)	<ul style="list-style-type: none"> • Enhance coverage and access of essential health services, especially for the poor and vulnerable • Ensure a measurable reduction in the burden of disease, especially among vulnerable segments of the population • Improve human resource management • Improve governance, regulation, and accountability • Enhance health financing for efficient service delivery and financial risk protection for the people of KP
Balochistan (Health Sector Strategy 2013–18)	<ul style="list-style-type: none"> • Strengthen PHC • Address challenges of health sector governance and accountability • Strengthen population welfare activities through coordinated efforts at BHU and Rural Health Centre level, and integrate these with MNCH coverage • Develop a nutrition programme through dedicated packages and inter-sectoral linkages in collaboration with other departments; nutritional services to be integrated with PHC, supplemented by the provision of nutrition supplements and capacity-building of service providers

The provinces have all (except to some extent Balochistan) developed articulated RMNCH strategies and targets.

In **Punjab**, the Health Sector Strategy 2018–30 includes RMNCH and Nutrition as one of its key priority areas. The strategy aims to achieve increased equitable access to and quality of Maternal Newborn Child Health, Family Planning, and Nutrition across all public and private sector facilities in Punjab. Key objectives include:

1. ensuring prompt and free access to a high-quality MNCH service, irrespective of ability to pay, to all the people in Punjab;
2. institutionalising quality of care in the MNCH services delivery system;
3. ensuring prompt and free access to high-quality nutrition, irrespective of ability to pay, to all the people in Punjab;

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4. institutionalising quality of care in the nutrition delivery system;
 5. ensuring prompt and free access to high-quality family planning services irrespective of ability to pay, to all the people in Punjab; and
 6. institutionalising quality of care in the family planning delivery system.

To achieve these objectives, the health policy has outlined strategic directions – a few of these include:

1. establishing a Human Resource Planning and Development Unit;
2. ensuring political will and commitment to oversee and support all the initiatives for the achievement of comprehensive health and well-being;
3. ensuring the availability of basic and comprehensive emergency obstetric and newborn care (EMONC) facilities as per need/standards;
4. providing free-of-charge services to marginalised people;
5. establishing urban MNCH centres;
6. establishing linkages with the private sector/family physicians;
7. institutionalising a well-defined referral mechanism;
8. developing coordination and linkages with donors (international non-governmental organisations as development partners, and local non-governmental organisations for resource mobilisation and pooling);
9. institutionalising an essential package of health services as per minimum service delivery standards;
10. institutionalising a structured mechanism for verbal autopsy of maternal and newborn deaths at all levels;
11. enhancing geographical access to OTP and SCs;
12. repositioning family planning as a core health intervention;
13. enhancing the availability and accessibility of FP services; and
14. enhancing coordination between Departments of Population Welfare and Health.

In **Balochistan**, the Comprehensive Development Strategy 2013–20 sets out policy priorities, including for health, but there is no complete RMNCH strategy. RMNCH objectives and targets were incorporated from the federal LHWP into a provincial PC-1 (2016/7 to 2021/2) to guide the annual development plans.

KP has developed a Health Sector Policy (2018–25) which sets a number of RMNCH policy priorities. The implementation process will involve the design of detailed activities and project plans and the PC1 will be prepared to secure the technical, human, and financial resources required. The Health Sector Reform Unit will be the entity responsible for the implementation of the policy.

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1. The Health Sector Policy gives priority to the execution of a Minimum Health Service Delivery Package at primary and secondary health facilities in the province. Special focus areas include: new born survival; birth spacing and contraceptive supply; communicable and non-communicable diseases; and under-nutrition.
 2. In addition, it envisages strengthening the referral mechanism.
 3. The Department of Health will specifically focus on the provision of family planning services through health facilities network and community-based LHWs and CMWs.
 4. Ambulance services will be established for maternal and child care. The utilisation of existing ambulance services will be reviewed and improved. The provision of other transport options will be explored to make access to healthcare easy for the disadvantaged.
 5. Preventive healthcare services focusing on child immunisation, reproductive health, malnutrition, communicable diseases, non-communicable diseases, and congenital diseases will be strengthened with a fully resourced plan.
 6. EPI will respond to the system-level challenges by focusing on low-performing areas, attempting to reduce dropouts, and improving monitoring and supervision systems. LHWs will be involved to deliver routine immunisation services in their catchment areas. The Department of Health will provide all resources for implementing the Comprehensive Multi-Year Program for EPI in the province.
 7. The Department of Health will develop a practical programme with the objective of improving the nutrition status of women of childbearing age and children below three years by improving the coverage of cost-effective nutrition interventions.
 8. Polio eradication will remain the priority of the government and efforts will be made to interrupt disease transmission.
 9. Priority would be given to enhance capacity in the province for the education and training of nurses, Lady Health Visitors (LHVs), midwives, pharmacists, allied health workers/paramedics. For example, LHVs will be trained to provide counselling on birth spacing and family planning, and roles and responsibilities for LHWs will be reviewed, with a focus on improving coverage, nutrition interventions, family planning, and child health outcomes.
 10. The roles, responsibilities, and functions for LHWs would be reviewed, while ensuring maximum possible coverage in the province, especially in the rural and hard-to-reach areas. A further increase in number of LHWs will be decided on as part of a rationalisation exercise.

In order to achieve the set RMNCH priorities in the KP Health Policy, a Health Sector Strategic Plan (2019–23)¹⁰ has been developed. The targets include:

¹⁰ Draft Health Sector Strategic Plan, (2019–23).

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1. Increase the contraceptive prevalence rate (CPR) to 55%.
 2. At least 90% of births will be attended by a skilled birth attendant.
 3. At least 80% of the population will have access to the Minimum Health Services Delivery Package for primary and secondary healthcare services.
 4. Reduce the maternal mortality rate to 140/100,000 live births.
 5. Reduce the infant mortality rate to 40/1,000 live births, with an emphasis on reducing newborn deaths.
 6. Ensure a 10% reduction in the prevalence of underweight children under five years old through the implementation of a comprehensive nutrition programme.
 7. Increase exclusive breastfeeding to 65%.
 8. Ensure 90% of children under five have received appropriate vaccinations according to EPI schedule.
 9. Reach zero transmission of the polio virus by 2020.
 10. Ensure 90% of children under five have received appropriately timed Vitamin A supplementation.

For **Sindh**, the Health Sector Strategy (2012–20) sets a number of RMNCH policy priorities. The implementation process will involve the design of detailed activities and project plans to secure the technical, human, and financial resources required. These include:

- rolling out Minimum Service Delivery Package provision in frontline public sector facilities, with at least one facility providing such a package per Taluka¹¹;
- implementing an enhanced and integrated community-based package of services and expand service coverage measure;
- deploying and training LHWs and multi-purpose health workers linked to the family practice model for community-based health package targeted at the entire household;
- enhancing quality and outreach of community-based workers;
- ensuring aggressive coverage of polio through implementation of community-based Polio Plus Program in high-risk union councils;
- mainstreaming evidence-based action for under-nutrition in health packages and establishing linkages with other sectors for integrated pilots;
- functionalising MNCH services to provide essential package of health services and a Minimum Service Delivery Package, at the community-based level, and

¹¹ Known elsewhere in Pakistan as a Tehsil. It is an administrative classification representing the second-lowest tier of local government in Pakistan

enhancement of community-based services, building in evidence-based interventions;

- re-defining links with the Department of Population Welfare with shift of contraceptive services through districts and urban PHC systems and aimed at birth spacing in younger couples;
- mainstreaming primary and secondary control of NCD interventions and lifestyle support in low-income urban townships;
- establishing links between TB, malaria and hepatitis for integrated control at community-based Minimum Service Delivery Package and ESDP levels, and evidence-based intervention enhancements;
- implementing focal action on HIV/Aids and sexually transmitted infections in targeted risk groups through non-governmental organisation–government partnerships;
- enhancing technical and budgetary support for market surveillance and quality assurance of drugs;
- strengthening the management of drug supplies in public sector so as to improve the availability of high-quality drugs and improve accountability;
- establishing a multi-stakeholder provincial health commission on non-communicable diseases (NCDs) focal body in the province for technical guidance on control for NCDs across the health sector in Sindh; and
- increasing investment in provision of primary care and essential secondary referral care.

The Health Sector Strategy includes a monitoring and evaluation framework which proposes sector-wide monitoring of the seven strategic outcomes based on key performance indicators linked to the achievement of Millennium Development Goals for Pakistan. Target indicators under the identified RMNCH-related strategies include:

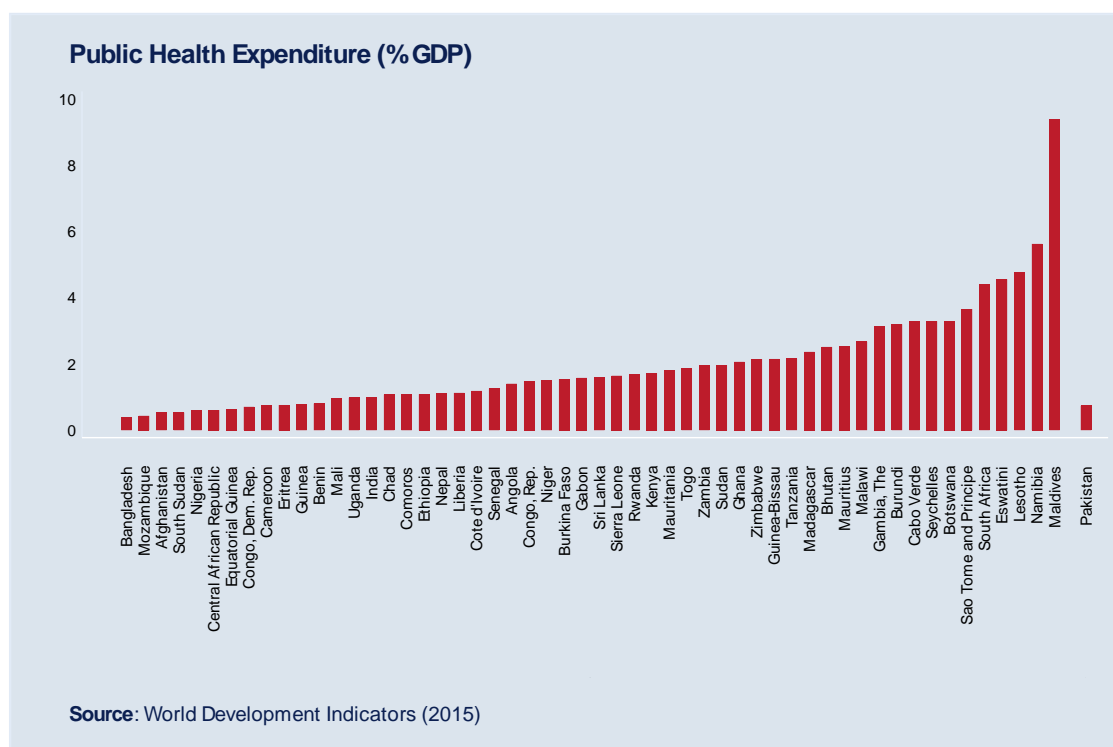
- detailed and costed rural Minimum Service Delivery Package and essential package of health services developed by 2012;
- 50% increase in coverage of outreach services by 2017;
- an increase in referrals by 50% by 2014;
- LHWs trained in enhanced service by 2015;
- coverage of multi-purpose workers (volunteers and LHWs) extended to 50% of under-covered areas by 2017;
- implementation of Polio Plus in all districts by 2016;
- implementation of enhanced nutrition in all districts by 2016;
- enhanced MNCH package implemented in all districts by 2016;
- integrated contraceptives services with maternal care by 2016;

- operationalised NCD Commission by 2013;
- 50% of major public sector hospitals and 100% of districts following quality parameters for procurement by 2014;
- logistics MISs in place in all districts by 2015; and
- design of new PPHI modalities for implementation after conclusion of existing contracts by 2013.

3.3 Public and private expenditure on healthcare

Despite the ambitious vision statement of the National Health Vision¹² and the goal for the achievement of UHC, the health sector remains underfunded in Pakistan, with public health expenditure accounting for less than 1% of GDP. Figure 3 demonstrates that this compares poorly with South Asian and Sub-Saharan countries, with Pakistan in the lowest quintile of public expenditure on healthcare.

Figure 3 Public health expenditure (% GDP)

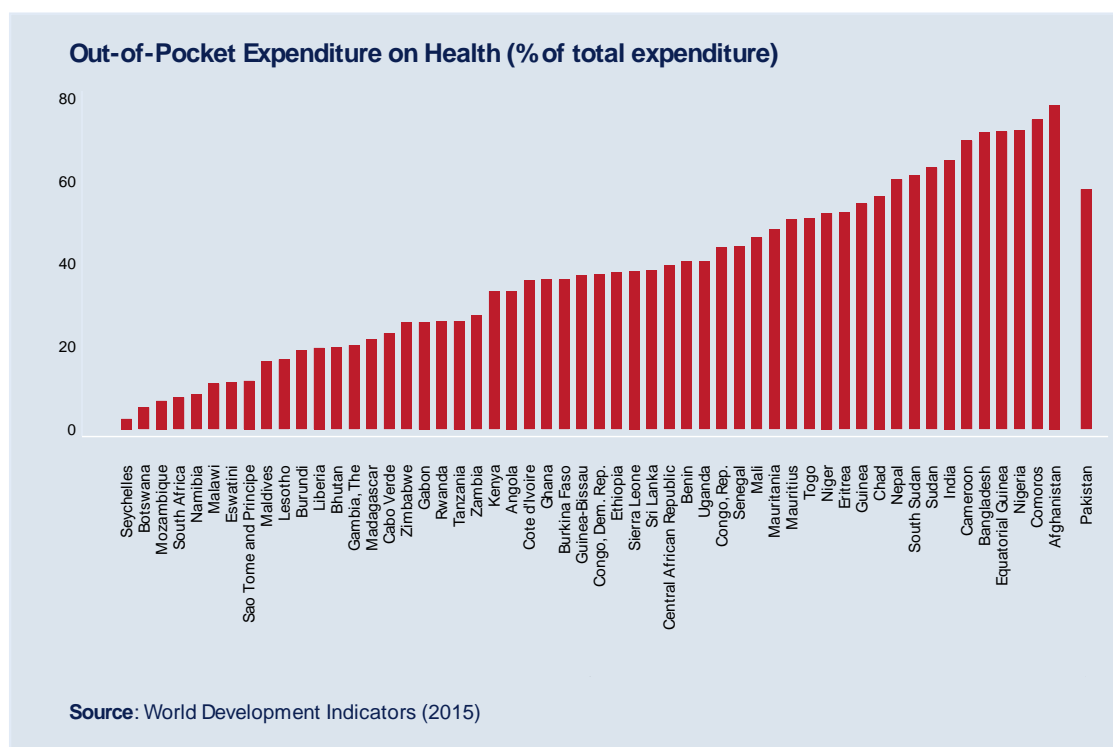


¹² Government of Pakistan (2016b).

While public health expenditure as a percentage of GDP was below 1% for the decade 2006–2015,¹³ there has been a small but steady increase over the same period, increasing from 0.53% in 2006 to 0.74% in 2015.

Low levels of public expenditure on healthcare in Pakistan has meant that the private sector plays a large role in the delivery of health services, with individuals making out-of-pocket payments for health services (including private insurance schemes). According to the National Health Accounts (2015/16)¹⁴ 64% of all current health expenditure in Pakistan comes from private funding, of which the vast majority (90%), is derived from out-of-pocket expenditure. As is demonstrated in Figure 4 below, these high rates of out-of-pocket expenditure puts Pakistan in the top decile in relation to countries in South Asia and Sub-Saharan Africa.

Figure 4 Out-of-pocket expenditure on health



3.4 Overview of RMNCH in Pakistan

Pakistan is the sixth most populous country in the world, and with the highest rates of still births (43.1 per 1,000 total births)¹⁵ and third highest rates of newborn mortality¹⁶ in the world, its progress towards achieving the Sustainable Development Goals has

¹³ World Development Indicators.

¹⁴ Government of Pakistan (2018b).

¹⁵ Blencowe *et al.* (2016).

¹⁶ Lawn *et al.* (2014).

been slow. Relative to many regional Asian countries, Pakistan's progress in RMNCH has lagged behind,¹⁷ though there are promising trends particularly related to family planning, and maternal and selected child healthcare indicators.

Factors that have contributed to Pakistan's poor progress on RMNCH indicators include its low level of female literacy, high levels of gender inequality, political challenges, and violence associated with extremism. Furthermore, less than 1% of Pakistan's GDP¹⁸ is allocated to the health sector, the lowest level in the region bar Afghanistan and Bangladesh.

The purpose of this section is to review trends in RMNCH indicators to provide the health outcome context in which the LHWP is operating.

3.4.1 Child health and nutrition

Pakistan has some of the lowest child life expectancy ratios in the world, as defined by under-five mortality rates. In 2017–18, under-five mortality rates in Pakistan were 74 per 1,000,¹⁹ well above the global average of 39.1,²⁰ placing Pakistan in the top decile for under-five mortality globally. While progress has been made on under-five mortality rates, they remain high compared to the region as a whole due to health issues such as diarrhoea, malnutrition, and acute respiratory illnesses. Progress on neonatal mortality has been slower, with 42 newborns dying in their first month for every 1,000 live births (see Figure 5), which is among the highest rate in the world and higher than the rate for Pakistan's close neighbour Afghanistan.

¹⁷ Bhutta *et al.* (2013).

¹⁸ Government of Pakistan (2018b).

¹⁹ DHS (2019).

²⁰ World Development Indicators (<https://data.worldbank.org/indicator/SH.DYN.MORT>, accessed 19 March 2019).

Figure 5 Trends in child mortality

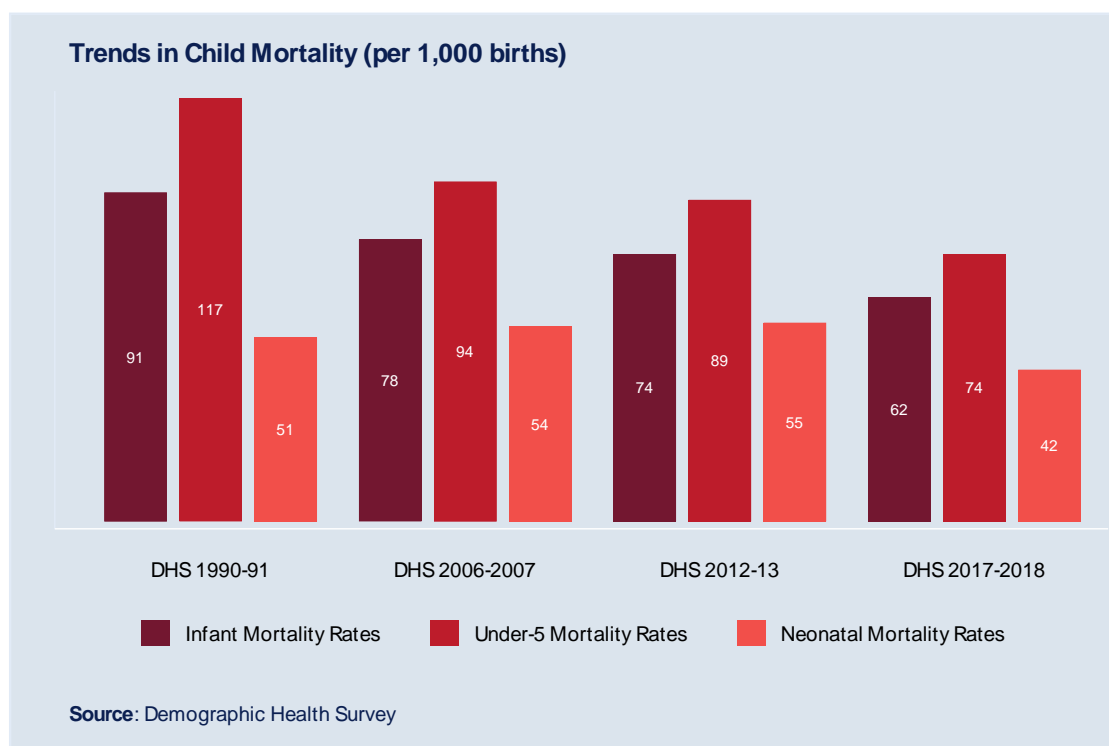


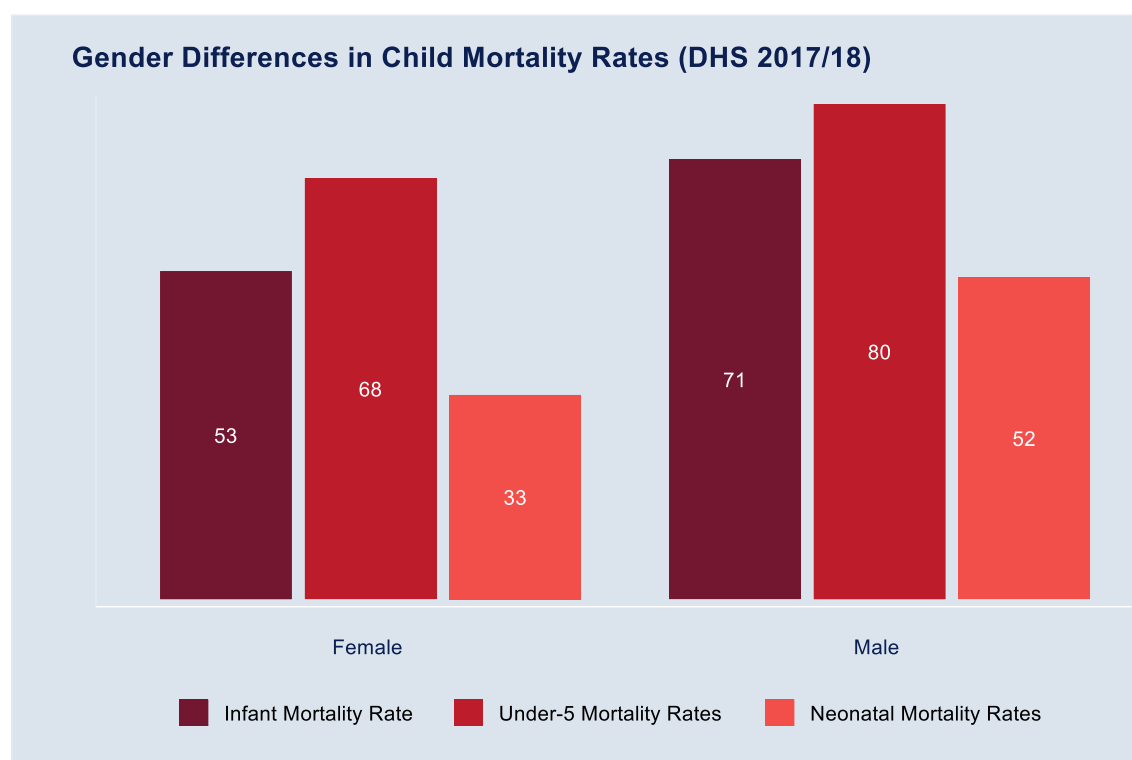
Figure 6 presents gender differences in child mortality. For each measure of child mortality – within a month (neonatal mortality); within year (infant mortality); and within five years of birth – the mortality rate is lower for girls. During early infancy, this reflects the biological advantage that girls have with lesser vulnerability (assuming equal access to resources) to perinatal conditions, congenital anomalies, and infectious diseases, such as intestinal or respiratory infections.²¹

However, girls do not enjoy the same biological advantage in relation to certain infectious diseases, which are the primary causes of death in later infancy and early childhood settings where overall mortality is high,²² as is the case in Pakistan. This can be seen in the data presented in Figure 6, where the female neonatal mortality rate is 63% of the male rate, the female infant mortality rate is 75% of the male rate, and the female under-five mortality rate is 85% of the male rate. This is reflective of the biological advantage of girls lessening as children age.

²¹ Waldron (1998).

²² Garenne, M. and Lafon, M. (1998).

Figure 6 Gender differences in child mortality



Child nutrition is another area of concern, with Figure 7 reporting high levels of child malnutrition across Pakistan, with rates of wasting at 7% for all children under five years. There is considerable variation across the provinces in terms of the severity of this problem, with rates of wasting ranging from 18% in Balochistan, which places the province in a status of nutrition emergency, according to World Health Organization guidelines, to a low of 4% in Sindh. The Pakistan DHS (2017–18) also indicate that children who live in a household in lowest wealth quintile and whose mother has received no education are more likely to be wasted, with rates of wasting at 10% and 9% respectively for these groups.

Figure 7 Proportion of children malnourished (0–5 years)

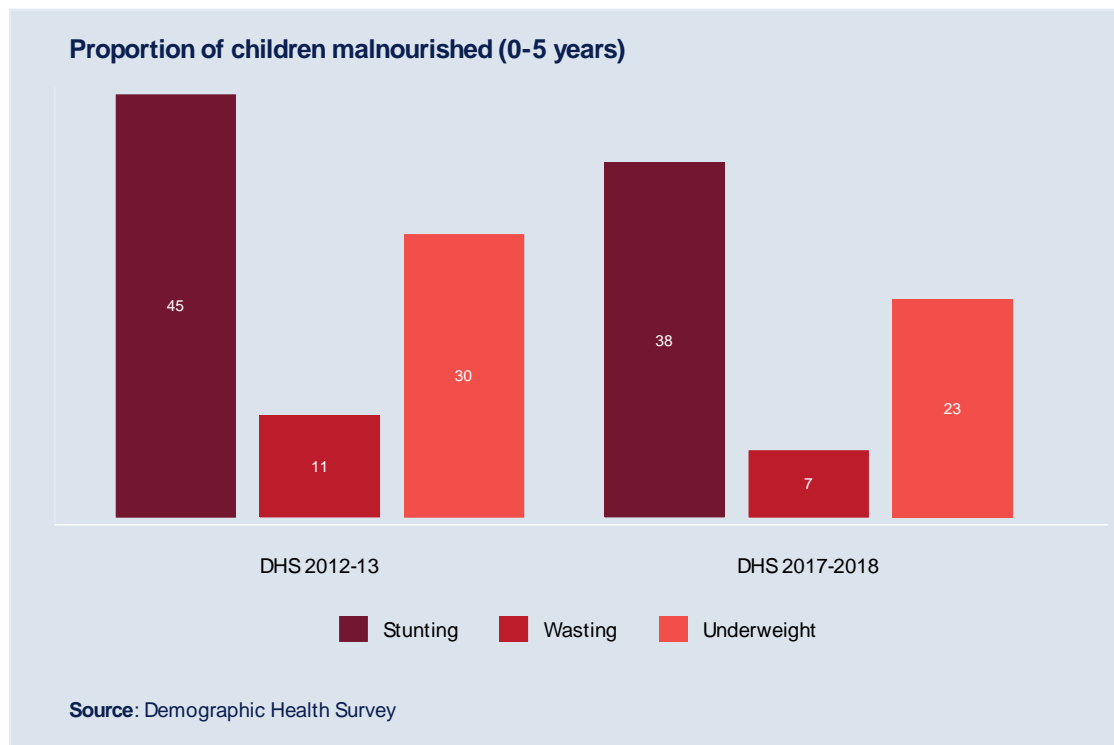
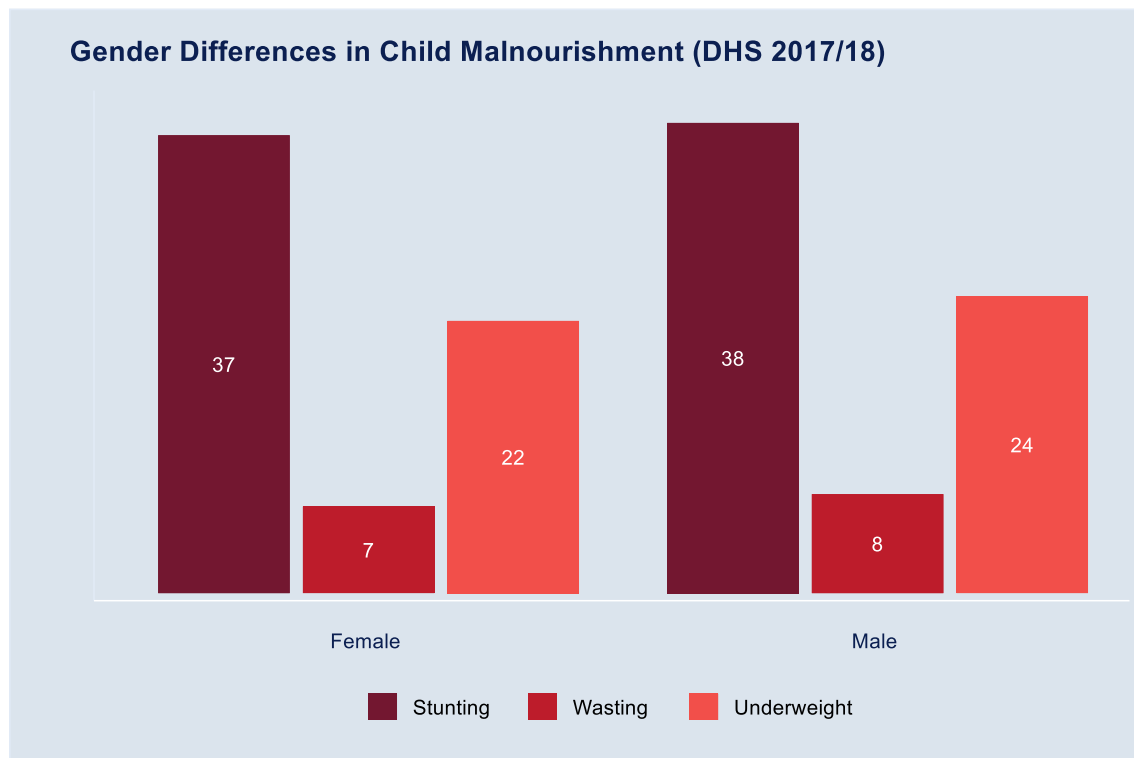


Figure 8 presents gender differences in child malnourishment, which demonstrates that there are no significant differences across the genders in terms of the proportion of children who are stunted, wasted, or underweight in the most recent round of the Pakistan DHS.

Figure 8 Gender differences in child malnourishment



The National Health Vision as well as the Health Sector Strategies at province level aim at increasing full immunisation coverage to 100%. Figure 9 shows that while some significant progress has been made towards this target, there is still much work to be done in this area.

As with the child nutrition indicators, there is significant variation across the provinces in terms of full immunisation coverage. Balochistan again exhibits the lowest rates of full immunisation (29%), while Punjab again performs the best (80%), with KP (55%) and Sindh (49%) below the national average.

Children in the lowest wealth quintile households and whose mothers have no education are also less likely than average to be fully immunised, with rates of full immunisation of 36%, 50%, and 63%, respectively.

Figure 9 Proportion of children aged 12–23 months fully vaccinated

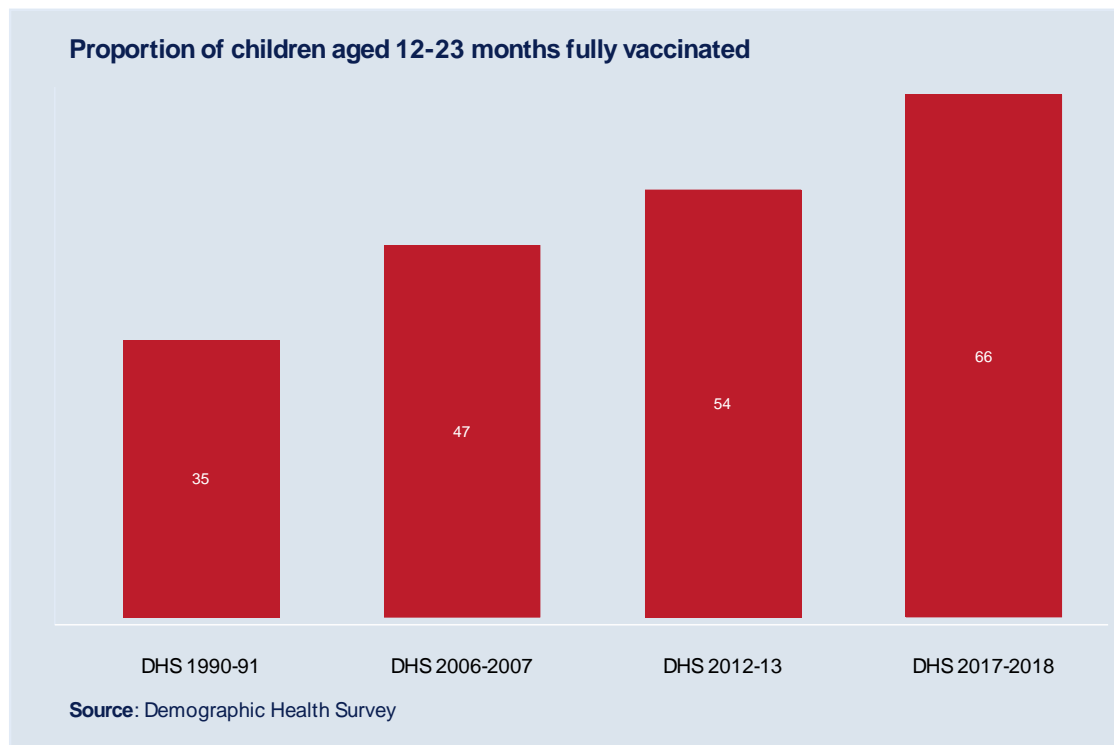
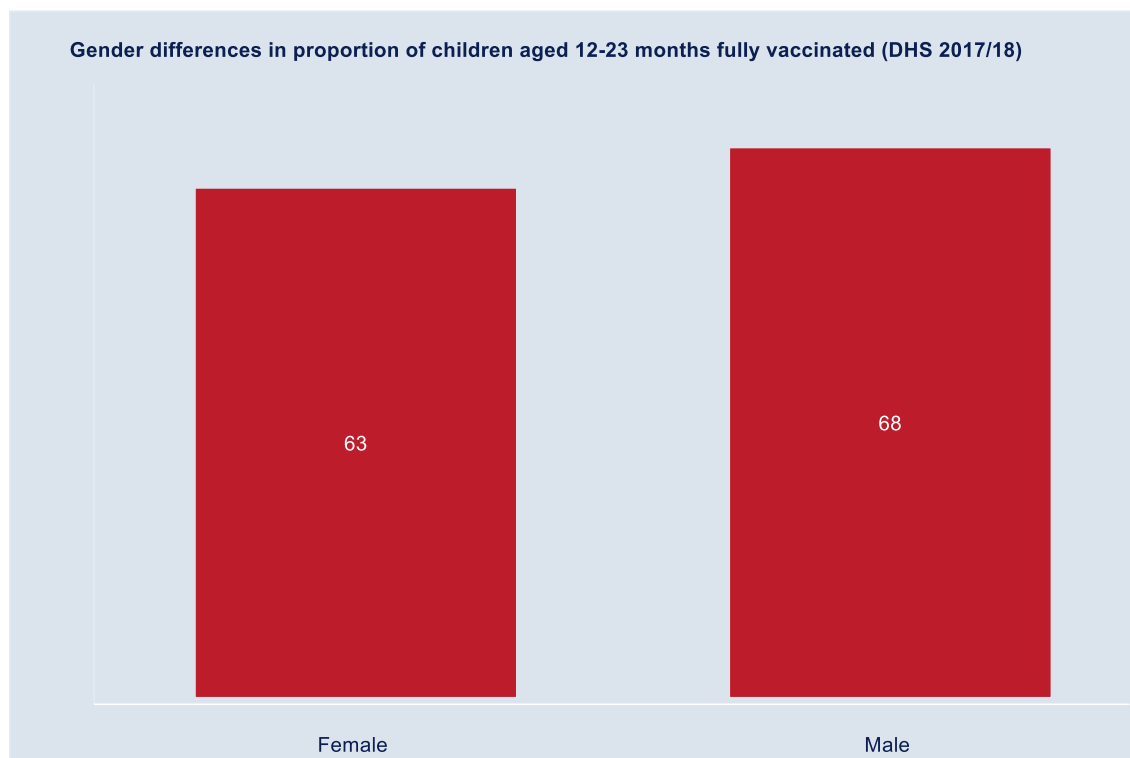


Figure 10 presents the gender differences in the proportion of children aged 12–23 months who have been fully vaccinated. This shows that boys are marginally more likely to be fully vaccinated than girls, with 68% of boys fully vaccinated compared to 63% of girls. This may reflect an overall preference among primary caregivers for boys to receive healthcare. However, it is worth noting that the gap in full vaccination between boys and girls closed slightly in the decade preceding the DHS 2017/18 round of survey. In the DHS 2006/07 survey round, the full vaccination rate for girls was 89% of the rate for boys. In the DHS 2017/18 round of survey the full vaccination rate for girls was 93% of the rate for boys.

Figure 10 Gender differences in proportion of children aged 12–23 months fully vaccinated



3.4.2 Maternal care

The expansion of the LHWP saw dramatic improvements in some indicators related to maternal care. For example, the Fourth Evaluation of the LHWP found that in households served by the LHWP, women were more likely to have received tetanus toxoid (TT) injections during pregnancy and neo-natal check-ups.²³ The core tasks of a LHW include the provision of basic ANC, as well as referrals to facilities or CMWs for deliveries. Figure 11 shows distinct improvements on a range of maternal care indicators, in particular related to those receiving ANC from a skilled provider, which increased from 26% in 1990–91 to 86% in 2017–18, with similar impressive increases in the percentage of deliveries at a health facility, as well as births attended by Skilled Birth Attendants.

There is, however, significant variation across the provinces. Balochistan has the lowest rate of maternal care with just 55% of women who had a live birth in the last five years receiving an ANC visit, 35% whose birth was attended by a Skilled Birth Attendant, and 38% who delivered at a health facility.

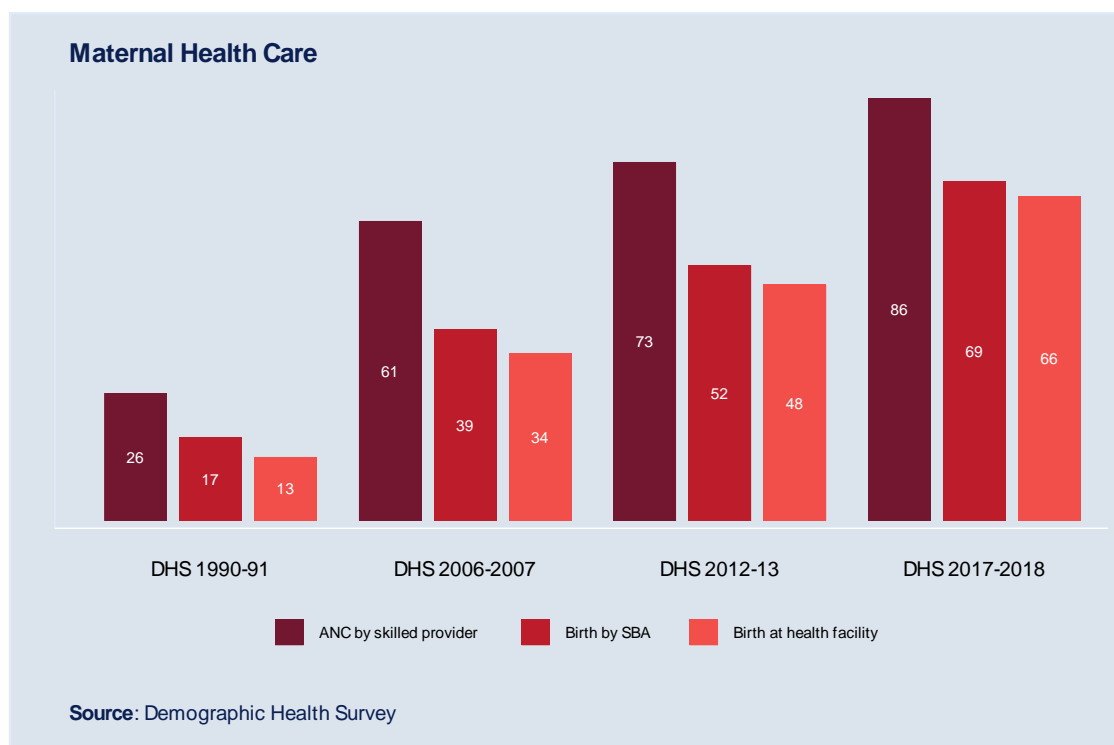
The Pakistan DHS (2017–18) also points to differences in maternal care for women in the lowest wealth quintile and women with no education, of which just 43% and 52%

²³ OPM (2009d).

respectively gave birth in a health facility, and just 68% and 76% respectively received an ANC visit from a skilled provider.

Despite the improvements in maternal care, maternal mortality rates remain high, with maternal deaths accounting for 27% of mortality among women of reproductive age (DHS, 2007). While the DHS did not measure the maternal mortality rate in the 2012–13 and 2017–18 surveys, it was estimated by the World Bank to be 206 per 100,000 live births in 2012, primarily due to conditions that could easily be prevented with basic healthcare.²⁴

Figure 11 Trends in maternal health care



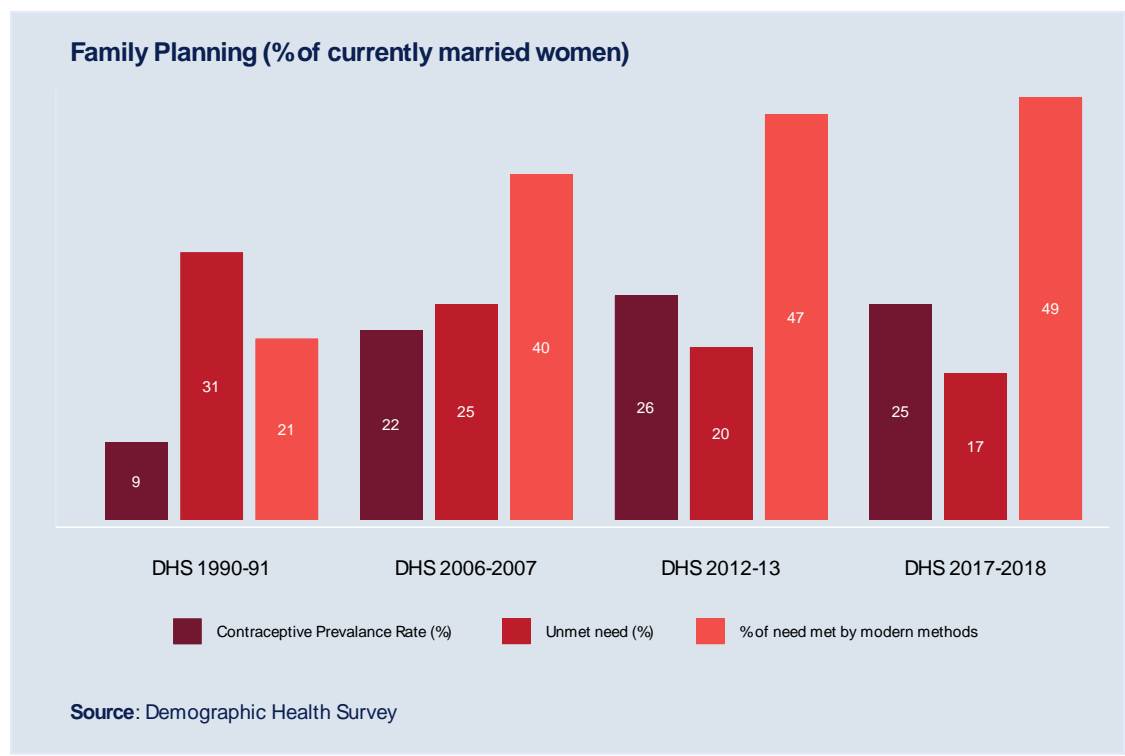
Family planning remains a core activity of LHWs. Fertility rates in Pakistan are high at 3.6 children per woman, the highest rate in South Asia bar Afghanistan, though this has declined from a rate of 5.4 children per woman at the time of the first DHS (1990–91). There is significant variation across the provinces, with the highest fertility rates observed in GB (4.8) and the Federally Administered Tribal Areas (4.8), and lower rates in Punjab (3.4) and Sindh (3.6).

Figure 12 presents the trends in the use of family planning methods, which shows a marked increase in the use of contraceptives in Pakistan since the inception of the LHWP, with just 9% of women using some form of contraception in 1990–91 to 25% in 2017–18, though progress has slowed over recent rounds of the DHS.

²⁴ Sathar, Z.A., Wazir, M.A. and Sadiq, M. (2014) *Prioritising family planning for achieving provincial maternal child health and development goals*. Population Council.

As with other indicators, the household wealth and education levels and gender inequality play a role in the use of contraception. The CPR is just 17% for women in households in the lowest wealth quintile, and 22% for women with no education.

Figure 12 Trends in family planning (% of currently married women)



4 Evaluation purpose, objectives, and scope

4.1 Evaluation purpose

The Evaluation purpose is described in the ToR as follows:

RMNCH indicators are showing some improvements but there are also concerns about slow progress in underperforming districts is increasing as well as for overall very low Universal Health Coverage (UHC) index for the country in 2017. The National Health Vision of the Government of Pakistan aims to improve health of Pakistanis, particularly women and children by ensuring provision of UHC. This vision among other things, also means a stronger, more proactive and effective role for LHWs. The M/o NHR&C is interested to handover the current LHW programme (including current cost on the recurrent budget of the provincial DOHs) and provide additional resources to the provincial/area governments for scaling up the programme with required changes in the scope of work of the programme considering expected role of LHWs in achieving UHC. Therefore, there is a need to undertake evaluation of this programme now in order to utilize the lessons learnt and key findings in improving the programme in accordance with the National Health Vision and formulating a revised strategic plan of the programme for future planning.

It should be noted that the LHWP has already been fully taken over (including in financing terms) by the provincial governments, and that in both KP and Punjab, the LHWP no longer exists as a separate programme but rather is integrated within a wider RMNCH approach. While the Evaluation covers possible supporting and supplementary actions by the M/o NHR&C, it also identifies the main areas of provincial action, which will be the principal future determinant of LHW performance. It should be noted, though, that the Evaluation does not seek to provide a full evaluation of the LHWP in each province (and territory).

4.2 Evaluation objectives

The ToR define the objectives of the Evaluation as the following:

- to provide the M/o NHR&C and DOHs and other stakeholders with accurate, credible, and usable information on the performance of the LHWP under the changing context;
- to examine changes in the programme performance since the Fourth Evaluation in 2008–09 and the devolution in 2011 against the DAC criteria for evaluation;
- to explore the determinants of this performance (internal and external, such as the enabling environment) and the system support;

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- to review and assess the benefits of LHWP received by the entire health system in various ways, especially where the LHWs are used by various stakeholders to support their programmatic objectives;
 - to document the socio-economic benefits to the LHWs and LHSs, and their families and communities of working with the programme; and
 - to provide analysis and recommendations on how to further strengthen the programme's performance.

4.3 Key stakeholders in the Evaluation

The ToR state that the primary recipients of this work will be the Government of Pakistan (more specifically, the M/o NHR&C and the Provincial/Area Departments of Health), the Ministry and Departments of Planning and Development, the Ministry and Departments of Finance, donors, UN agencies, and other partners.

The secondary recipients will be women, men, children, families, communities, healthcare providers, policy makers, opinion leaders, and partners.

The primary stakeholders, UNICEF and the M/o NHR&C, were represented through the TWG for the Evaluation, which also included members of the OPM Evaluation Team. The TWG met at key points during the Evaluation to provide support to the evaluation process, which included:

- reviewing the inception report to provide technical guidance to revise the methodology, EQs, data collection tools, and evaluation work plan;
- monitoring the quality and progress of the Evaluation throughout;
- reviewing the draft evaluation report and giving recommendations for the finalisation of the evaluation report;
- reviewing the final report and providing recommendations to relevant stakeholders; and
- facilitating the dissemination of the final report to wider stakeholders.

Wider circulation of the findings to the 'secondary recipients' – including ultimate beneficiaries – should take place through targeted dissemination activities once the Evaluation is complete.

4.4 Evaluation scope

The ToR define the scope of the Evaluation as follows:

Geographically, the evaluation will review the current performance of the programme throughout the country including all provinces/areas. Temporally, it will take into account the progress since devolution and the last evaluation in 2008-09 to collect lessons and recommend future course of action and with a revised scope

of work for improved performance. Programmatically, the following scope of work must be covered by the evaluation team:

- 1. The relevance of LHWP in relation to national, provincial and global health sector priorities.*
- 2. The objectives of the LHWP and their contribution to the national health sector strategic plans as well as the UHC framework.*
- 3. The progress and achievements of LHWP in relation to expected results since 4th evaluation and more specifically devolution of the programme in 2011.*
- 4. The extent to which LHWP objectives were achieved over the period (in the light of the agreed Theory of Change).*
- 5. The progress of LHWP towards full DOHs/ ownership and leadership of the program.*
- 6. The performance and efficiency of LHWP in terms of utilization of funds vis-a-vis achieved results– the extent to which costs of the activities can be justified by the results.*
- 7. Other ongoing programme in the areas of RMNCAH as well as support from UN organizations and other partners and their direct/indirect effects on LHWP.*
- 8. The efficacy of programme structure and systems to manage with regard to coordination, supervision, results reporting, financial management, procurement and monitoring and evaluation.*
- 9. Review of the implementation of the risk analysis, mitigation and management processes established within LHWP, risk evaluation, mitigation and management.*
- 10. The donor funding mechanism for LHWP.*
- 11. The linkages and possible synergies with other health initiatives and funds such as GAVI, etc.*

Based on the above information, the consultants should reflect on the comparative advantages of LHWP in relation to other initiatives and provide inputs on the way forward to enhance future relevance and performance. The Evaluation is expected to give concrete and realistic recommendations with regard to future directions and management of the programme.

The Evaluation has covered all regions of the country. It has also covered each of the listed items 1–6, 8, and 9. It has not focused on donor funding mechanisms (10) because donors are not generally playing a significant direct role in LHWP implementation, except to some extent supporting training. The Evaluation has also not focused in detail on linkages and synergies with other health initiatives (11) or other RMNCH programmes (10) because provinces are increasingly integrating the LHWP

within wider RMNCH strategies (especially in Punjab and KP), so that LHWs are better seen as a modality of support and intervention, rather than as a specific ‘programme’.

4.5 Summary of evaluation methodology

The Inception Report set out the main features of the evaluation methodology:

- A **theory-based evaluation approach** that is based on an explicit formulation and representation of the ToC for the LHWP (which has not been produced before) and then on testing the extent to which the key links in the causal chain by which the LHWP generates results have held, and the contextual factors that influence this.
- A **Realist Evaluation perspective** that focuses on understanding variations in performance, particularly those relating to differences in policy and resourcing decisions over time, between regions, and in different contexts, through explicitly addressing the question ‘To what extent does the LHWP work, for whom, where, in what respects, and how?’ and that formulates the ToC in line with the Realist Evaluation perspective.
- A **clearly structured and succinct articulation of the EQs** based on the DAC evaluation criteria and well-defined question levels.
- **Conducting a set of ERAs** combining both qualitative and quantitative approaches to providing evidence to answer the EQs (with an evaluation matrix showing which ERAs are providing evidence to answer which EQs).
- A **synthetic approach** that combines evidence from different sources to answer each EQ, giving explicit and due weight to the quality of the different sources of evidence that are generated.
- A **Utilisation-Focused Evaluation** approach such that the Evaluation is planned and implemented in ways that enhance the likely utilisation of Evaluation findings.

4.6 EQs

The EQs were developed from suggested questions in the ToR based around the OECD/DAC evaluation criteria of relevance, effectiveness, efficiency, impact, and sustainability. The finalisation of EQs was based on:

- the results of discussions with the Evaluation Steering Committee and the Technical Working Group to clarify the Evaluation Team’s understanding of priorities and issues;
- appropriate classification of EQs in relation to the DAC criteria, and whether they should be treated as High Level EQs or sub-questions (contributing evidence to answer High Level EQs);

- ensuring formulations of EQs are clear and concise, and support explicit evaluation judgements; and
- additional or modified EQs that are implied by the methodology, particularly the Realist Evaluation perspective.

The Inception Report provides a mapping of the selected EQs to those suggested in the ToR. The EQs selected are set out in Table 2.

Table 2 EQ list and summary evaluation matrix

DAC criteria	EQ	Evaluation question	RA1	RA2	RA3	RA4	RA5	RA6	RA7	RA8
Relevance	A1	To what extent does the programme address the needs, priorities, and rights of marginalised and vulnerable children, women, and men in programme areas?	✓	✓	✓			✓	✓	✓
	A2	To what extent is the LHWP an appropriate instrument to achieve the national and provincial RMNCH objectives?		✓	✓					✓
	A3	Are the federal and provincial roles in LHWP clear and appropriate and how have they changed since devolution?		✓	✓					
	A4	To what extent has the selection of areas for the LHWP implementation been appropriate to achieve the stated objectives?						✓	✓	
Effectiveness	B1	To what extent has the programme achieved its objectives/outcomes and what were the major factors influencing the achievement or non-achievement of the objectives/outcomes?			✓	✓	✓	✓	✓	✓
	B2	To what extent does the LHWP work, for whom, where, in what respects, and how?	✓		✓			✓	✓	✓
	B3	What are the main features of the intervention towards the realisation of Human Rights and Gender Equality?			✓			✓	✓	✓
	B4	How effectively have various government programmes and departments who use LHWs to achieve their sectoral objectives, co-ordinated among each other?			✓			✓		
Efficiency	C1	How well have resources, both human and financial, been managed to ensure the timely, cost-effective, and efficient attainment of results? To what extent costs incurred can be justified by the results achieved?			✓	✓	✓			
	C2	To what extent can costs incurred be justified by the results achieved?			✓	✓		✓	✓	
	C3	Has the programme been appropriately funded, and how does this vary between provinces?			✓	✓				
	C4	To what extent are planning, budgeting, monitoring and evaluation, supervision, coordination, logistics, and financial management systems functioning			✓	✓				

DAC criteria	EQ	Evaluation question	RA1	RA2	RA3	RA4	RA5	RA6	RA7	RA8
		well in support of effective LHW performance?								
	C5	What mechanisms are in place to facilitate learning, and how has the LHWP made use of this learning to adapt programming?		✓	✓	✓				
	C6	Is there a process for managing risk, and to what extent has this been successful in identifying and mitigating risk?			✓					
Impact	D1	To what extent has the programme contributed to the long-term health outcomes of the LHWP, especially of women and children?						✓	✓	
	D2	To what extent has the programme contributed to the empowerment of LHWs and LHSs?							✓	
Sustainability	E1	To what extent is there effective political will and stakeholder commitment at national and provincial level for continuing the LHWP?			✓					✓
	E2	To what extent is the LHWP affordable within the resources available for the sector?			✓	✓				

In implementing the Evaluation, a few minor changes were made to the EQs. First, since a Realist Evaluation perspective on the ToC was used, and there was already strong prior evaluation and research evidence that the ToC was valid and effective, EQ A5 was in effect redundant, the issue being more about when, where, and for what reasons the ToC was holding, rather than its overall ‘validity’. This issue was therefore covered by the core Realist Evaluation EQ, B2. EQ D2 was also reformulated in line with the ToC to emphasise the ‘empowerment’ of LHWs, not just the narrower concept of ‘improved status’.

4.7 ERAs

The evidence to answer the EQs has been obtained through a set of discrete ERAs. These were defined as follows (full details of the methodology are included in the research outputs from the ERAs and in the Inception Report):

ERA1: Literature review: this was split into two parts:

ERA1a: a review of the global evidence on the performance of related community health workers. This focused on the mechanisms by which LHWs can be effective in bringing about behaviour change in their clients and the communities that they work: knowledge; client engagement; motivation; and empowerment.

ERA1b: a review of academic research and evaluation evidence related to the performance of the LHWP.

ERA2: Health sector context review: this aimed to provide a review of both the national and provincial health sector context, including health sector policies and strategies.

ERA3: Review of LHWP strategy, management, financing, and implementation arrangements: this included:

ERA3a: reviewing coordination issues and the role of the federal ministry, as well as the envisaged place of the LHWP in achieving national health policy objectives.

ERA3b: province studies (also including federally administered territories) that examine how the LHWP is being used in each province to pursue RMNCH and other objectives, including how the way in which the LHWP is being managed and implemented is diverging between provinces.

ERA4: Costing study: this involved an assessment of trends in the cost and cost-structure of the LHWP, focusing on the cost per LHW, and how this is varying over time and between provinces.

ERA5: Review of LHWP MIS: this will involve a two-stage process. In the first stage a rapid review of the quality of data contained in the LHW-MIS was performed to assess which aspects of the LHW-MIS are appropriate for use in an independent evaluation; in the second stage, LHW-MIS was used to provide evidence to answer EQs, especially those related to effectiveness.

ERA6: District case studies: this ERA will involve qualitative research at various levels within purposively selected districts. Through the use of KIIs and FGDs, this activity will examine the EQs related to effectiveness and efficiency (in particular, B1 and C4), charting the implementation of the programme from district level downwards. This also included an **LHW and LHS perspective study**, which interviewed LHWs and LHSs to gather their perspectives on the programme, including the extent to which it has empowered them.

ERA7: Impact assessment study: this used secondary quantitative data (from the Pakistan DHS) to assess the impact of the LHWP on health outcomes across provinces, especially through a comparative analysis of served and unserved areas.

ERA8: Stakeholder consultation and analysis: this involved obtaining perspectives on the LHWP from a range of stakeholders outside government (including civil society organisations, academics, and researchers) at both federal and provincial level.

It was originally envisaged that each ERA would produce a separate research output. In practice, it has proved more appropriate to combine some of the research outputs. As a result, the provincial (and territory) studies under ERA3b has been combined with the provincial stakeholder consultation under ERA8 to produce the set of regional reports. Since only a small number of interviews were undertaken at federal level, a separate ERA output has not been produced but the research results have been used directly to inform the Evaluation findings. The limitations of the MIS data meant that it

was not possible to subject it to additional detailed analysis, and the findings from the MIS review have been incorporated into the Quantitative Analysis Report (ERA7) and the regional reports (ERA3). The provincial and territory health sector context review was also incorporated into the regional reports.

4.8 Evaluation methodology

4.8.1 ERA 3: Strategy, management, finance, and implementation review

This ERA focused in particular on the following issues:

1. reviewing the role that the LHWP is playing in provincial RMNCH and related health strategies and how this role is developing, and may be diverging, between provinces;
2. examining the federal coordination role in the LHWP, including how clearly this is defined, how effectively it is being implemented (from both the federal and provincial perspective), and the extent to which there is a case for strengthening or changing this role in order to support the improved achievement of national objectives;
3. providing a comparative review of LHWP management, organisation, financing, and implementation arrangements across provinces, including evidence on constraints and challenges encountered and how these are being addressed in different provinces; and
4. assessing the extent to which differences in LHWP management, financing, and implementation arrangements are creating differences in the context of implementation between provinces, which are likely to affect the performance of the 'mechanisms' that are critical to allow LHWs to perform effectively to achieve planned outcomes.

This ERA was conducted at both federal and provincial levels, as described above, and involved several types of data collection. This included evidence collated from group discussions, KIIs, FGDs,²⁵ and documentation reviews against a core set of functions. These functions relate to key aspects of the provincial context which influence the mechanisms on which the effectiveness of LHWs depends, in line with the ToC described in Figure 2 above.

The list of core LHWP functions against which evidence was collected was ratified during the Inception Phase by the TWG. The resulting core functions were the following:

- selection and recruitment of LHWs;
- training of LHWs;
- logistics support, including the supply of basic medicines as well as transport of LHSs;
- salaries, payments, and terms of employment;

²⁵ A full list of interviews conducted as part of this ERA is provided in Annex C.

-
- performance management arrangement;
 - monitoring and evaluation, reporting, and MIS; and
 - leadership and governance.

4.8.2 ERA 4: Costing study

The purpose of this ERA was to meet the call in the TOR for an assessment of the unit cost per LHW and per beneficiary, with an assessment in the variance of these unit costs across provinces and across time. The depth and scope of this ERA was predicated by the data available to the Evaluation Team. While the Evaluation Team was able to access total expenditure on the LHWP in each region of Pakistan, it was not possible to access the full breakdown of costs by activity or input in the majority of regions. The costing study has the following features:

Time period for analysis: a key point of comparison is the evolution of LHWP costs starting in the period before devolution and what has happened since. As such, we report a comparison of unit costs for the financial year 2017/18 to the results presented in the Fourth LHW Evaluation, which examined unit costs for the financial year 2007/08.

Standardising the measurement of costs: to provide an accurate assessment of trends in real costs over time, all costs are adjusted for inflation. They are adjusted by the Consumer Price Index as recorded by the Pakistan Bureau of Statistics,²⁶ and costs are expressed in 2017/18 prices.

Disaggregation of the cost structure: the ambition of the evaluation, as expressed in the Inception Report, was to provide a breakdown of expenditure on the LHWP by activity – for example activities such as recruitment, training, logistics, salaries, and monitoring. However, this ambition was predicated on the availability of disaggregated data. In the event, this was not made available to the Evaluation Team in the majority of regions and, as such, the costing study focuses on total costs, and total costs per LHW or beneficiary.

4.8.3 ERA 5: Review of the LHW-MIS

The purpose of this ERA was to focus primarily on producing evidence about the performance of the LHWP, and in particular regarding questions related to effectiveness.

This ERA included a rapid assessment of the quality of the LHW-MIS, which included:

- a review of available LHW-MIS documentation to understand the processes for the validation of information contained with the LHW-MIS;
- a review of raw LHW-MIS data to check for plausibility, completeness, and consistency – this included checks for missing values and checks for implausible data; and

²⁶ Accessed online via www.pbs.gov.pk/cpi

- interviews with key data users (as part of ERA 3) to understand potential strengths and weaknesses in the data.

4.8.4 ERA 6: District case studies

The purpose of this ERA is to provide in-depth, district-level evidence directly linked to the evidence generated by ERA 3. It does this within a small number of purposively selected districts in order to provide evidence against the whole ToC, with a particular focus on testing how features of LHWP affect the functioning of the mechanisms that are of central importance in determining the effectiveness of LHWs, as well as providing evidence to answer EQs related to relevance, effectiveness, and impact.

The approach to this ERA rests on a three-dimensional conceptual framework, presented in Figure 13, for understanding, analysing, and assessing the LHWP across the people that the LHWP engages with, the organisational arrangements of the programme, and the formal and informal institutions that the LHWP must work with.

Figure 13 Conceptual framework for ERA 6²⁷



At the level of people, the focus is on the beneficiary experience of the LHWP, as well as the experience of LHWs and LHSs, and in particular how the LHWP has impacted on their sense of empowerment and well-being. At the organisational level, the focus is on the LHWP structures, processes, and procedures, and how these influence service delivery, with a core focus on the core functions identified by ERA 3 in Section 4.8.1. At the institutional level, this ERA focused on understanding the formal and informal structures within which the LHWP operates.

Districts were sampled purposively to provide information-rich cases for in-depth study. 'Information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research, thus the team purposive sampling' Patton (2015). In the case of this Evaluation, maximum variation sampling was

²⁷ Source: OPM/UNICEF (2018) *Child protection Case Management and Referral System Model, Supply Capacity Assessment & Mapping, Balochistan and GB, 2018-19*.

employed, which identified high- and low-performing districts based on a range of health outcomes and LHWP output indicators.

Table 3 provides the location of the research sites for ERA 6, as well as the tools employed in each district. A full description of the sampling approach, as well as the qualitative tools employed, can be found in Annex E.

Table 3 Selected research sites and sample size

	High performing		Low performing	
	District	# of communities	District	# of communities
Punjab	Jhelum	1 Urban, 2 Rural	Rahim Yar Khan	1 Urban, 2 Rural
Sindh	Matiari	1 Urban, 2 Rural	Kashmore	1 Urban, 2 Rural
Balochistan	Noshki	1 Urban, 2 Rural	Barkhan	1 Urban, 2 Rural
KP	Mardan	1 Urban, 2 Rural	Lower Dir	1 Urban, 2 Rural
AJK	Mirpur	1 Urban, 2 Rural		
GB	Hunza	1 Urban, 2 Rural		
ICT	Islamabad	1 Urban, 2 Rural		
Total	7 Districts	7 Urban, 14 Rural	4 Districts	4 Urban, 8 Rural
Interviews conducted per district				
Tool	Respondent	Number of tools per district	Total number of tools	
KII	District Coordinator	1	11	
KII	DHO	1	11	
KII	LHS	2	22	
Empowerment ranking exercise	LHW	2	22	
Most significant change	LHW	2	22	
Community scorecard	Beneficiary women	6	66	
FGDs	Community men	6	66	

4.8.5 Impact assessment study

The purpose of the impact assessment study is to provide evidence to answer EQ D1: 'To what extent has the programme contributed to the long-term health outcomes of the LHWP, especially of women and children'? The Evaluation does this by assessing whether or not the LHWP has had an impact on a range of indicators presented in Section 5.4.1, using observational data from the three rounds of the Pakistan DHS: 2006/07; 2012/13; and 2017/18. Our analysis focuses on four provinces of Pakistan: Punjab, Sindh, KP, and Balochistan. We do so for purposes of comparability in the DHS data, recognising that data for other regions of Pakistan are not available in all rounds of the DHS.

Identifying the impact of the LHWP is challenging, with the main challenge lying in establishing a credible causal link between any differences we might observe in the outcomes between those served and unserved by the LHWP, and the LHWP itself.

Identifying served and unserved households

The first task is to identify those that have been served by the LHWP in the DHS data. We do this at two levels:

1. the individual level, where households are identified as served by the LHWP if they have been visited by an LHW at least once in the 12 months prior to the relevant DHS survey; and
2. the community level, where a community is identified as covered by the LHWP if the average number of households within that community which have been visited by an LHW is higher than the median number of visited households for the relevant province and time period.

It is important to be clear on the interpretation of any estimates of LHWP impact that will result from the identification of served and unserved households in this manner. At the individual level the impact of the LHWP of a household actually being visited by an LHW is measured, or in other words the intended impact of the programme. At the community level, the average treatment effect on communities in which an LHW works is measured, recognising that an LHW may not be able to visit all households.

Identifying the impact of the LHWP

It is challenging to rigorously identify the impact of the LHWP in order to make causal claims about the effect of the LHWP on key health outcomes of interest. Essentially, we have a problem of missing information. From the use of observational data available in various rounds of the DHS, we can track the status of women and children that have been exposed to the LHWP. Ideally, we would like to know the status of these same women and children if they had not been exposed to the LHWP. It is the difference between these two states that would give us the true impact of the LHWP.

Thus, the challenge of rigorously identifying the impact of the LHWP on health outcomes is to replicate this comparison by identifying a counterfactual group that is as similar as possible to women and children that have been exposed to the LHWP, i.e. the treatment group. Gertler *et al.* (2011) identify three conditions that a valid counterfactual must satisfy:

- Treatment and counterfactual groups must share on average the same characteristics.
- Treatment and counterfactual groups should react to the LHWP in the same way.
- Treatment and counterfactual groups should not be differentially exposed to other health related programming in the relevant period.

A counterfactual that satisfies the above three conditions can be considered robust to selection bias. An outcome of selection bias is that because of systematic differences between treatment and counterfactual groups (such as pre-existing differences in education levels) the evaluator would not be sure whether observed differences in

health outcomes are due to the causal impact of the LHWP or because of pre-existing differences between treatment and counterfactual groups.

Given that we are using observational data not specifically designed for evaluation, and given that the LHWP is rolled out purposively and not randomly, it is to be expected that there will be systematic differences between those served and not served by the LHWP.

To overcome this challenge, we have implemented a matching technique known as Coarsened Exact Matching (CEM) to assess the impact of the LHWP against key health outcomes of interest.

CEM seeks to address the problem of selection bias by constructing a credible counterfactual by matching possible counterfactual units to treatment units on a wide set of observed characteristics such that treatment and counterfactual are as balanced as possible, i.e. that they have exhibit no statistically significant difference in key observable variables other than their exposure to the LHWP.

CEM achieves this by coarsening each covariate available for matching by recoding them so that substantively indistinguishable observations are grouped together and assigned the same numerical value. To see how this works in practice, consider the covariate *age of woman* for our sample of women aged 15–49 years. We have coarsened this so that 15–19-year-olds are given value 1, 20–24-year-olds value 2, and so on.

Once covariates have been coarsened, an exact matching algorithm is applied to split treatment and covariate units into various strata, with each stratum containing exact values for all coarsened covariates. All units in *matched strata*²⁸ are retained. All units in *unmatched strata*²⁹ are pruned.

LHWP impact can then be estimated by comparing differences in the uncoarsened data between treatment and counterfactual units, with counterfactual units weighted by the relative size of the exactly matched strata.

We conduct this matching exercise for each round of the DHS separately, as well as conducting the matching exercise for each level at which we estimate impact. This means that different health outcomes are relevant to different populations. For example, the indicator *contraceptive prevalence rate* is relevant to the sample of ever-married women aged 15–49, while the indicator *proportion of children fully immunised* is relevant to the sample of children aged 12–23 months. We replicate the matching for each relevant sample to ensure that we provide adequate balance for each health outcome indicator of interest. Finally, we also repeat this matching separately for both the individual- and community-level identification of LHWP coverage, as described above.

²⁸ Strata containing at least one treatment and one counterfactual unit.

²⁹ Strata containing either only treatment or only counterfactual units.

The full technical details of the approach can be found in **Error! Reference source not found..**

4.9 Gender, inclusion, and human rights

The evaluation methodology was designed to ensure that the framing of EQs, data collection, and analysis were informed by an awareness of how gender, inclusion, and human rights shape and are shaped by both the LHWP and its evaluation. The evaluation design was informed by the United Nations Evaluation Group's (UNEG) guidance on integrating HR&GE in evaluations;³⁰ this stresses the importance of the inter-related principles of Inclusion and Fair Power Relations.

The LHWP was not conceived with an explicit human rights-based approach in its design or implementation. However, the LHWP does seek to support the desire to achieve UHC through the delivery of doorstep PHC, with a specific focus on underserved areas and marginalised communities, as well as to address the specific health needs of women and children.

This Evaluation has drawn on the UNEG's guidance on integrated HR&GE into the Evaluation³¹ in a number of respects:

- **Inclusion:** evaluating the LHWP from a HR&GE perspective requires paying attention to which groups benefit from the LHWP and which do not. To address this, we investigate how the LHWP is targeted with a specific focus on whether it reaches marginalised communities, and vulnerable women and children in those communities, using both the Quantitative Study as well as the Qualitative Research.
- **Fair Power Relations:** HR&GE goals seek, inter alia, to balance power relations between advantaged and disadvantaged groups. The LHWP does not have an explicit objective to address power relations between these groups, which is a function of many additional factors than simply access to PHC. In this Evaluation, we seek to understand whether the LHWP has had differential impact between beneficiaries in different socio-economic groups. In addition, we employ empowerment ranking exercises to understand whether the LHWP has had an effect on the empowerment of LHSs and LHWs.

4.10 Limitations and constraints

The limitations of the Evaluation are outlined in Table 4, alongside the mitigation strategies that this Evaluation has employed in response.

³⁰ UNEG (2011).

³¹ UNEG (2011).

Table 4 Limitations and constraints of the Evaluation

Description	Mitigation
No primary quantitative data collection	<p>Resources available to this Evaluation precluded the implementation of primary quantitative data collection. In response, and to enable the quantitative assessment of LHWP impact on health outcomes, this Evaluation exploits several rounds of the Pakistan DHS.</p> <p>This allows the Evaluation to identify individual women who have been visited by an LHW, and use this to create a proxy indicator of communities served by the LHWP. We use a quasi-experimental approach – CEM – to identify LHWP impact on health outcomes. The technical approach is presented in Error! Reference source not found..</p>
Reporting of financial allocations, releases, and expenditures	<p>In some regions, particularly KP, which receive funding from multiple sources, there was a lack of consistent reporting as related to budgets and financial allocations, releases, and expenditures.</p> <p>In regions where the LHWP had been integrated with other vertical programming, i.e. in KP and Punjab, expenditure records were not apportioned to the LHWP in particular.</p> <p>In other regions, no information was provided in terms of the breakdown of expenditure by particular item, notably at least to understand the split between salary and operational costs.</p> <p>This restricted some parts of the analysis related to expenditure. In the case of Punjab and KP, assumptions on the allocation of expenditure to the LHWP was made in consultation with the programme teams. This report only presents a split of expenditure between salary and operational costs in cases where this is available.</p>
Completeness of the LHW-MIS data	<p>A rapid review of the LHW-MIS conducted for this Evaluation indicated a number of concerns with the LHW-MIS that limits its usefulness. In addition to the LHW-MIS lacking a strong internal quality assurance and data validation mechanism, the rapid reported: incomplete information, whether non-reporting districts in some cases, or in some provinces only reporting more basic information such as LHW numbers, total populations, and covered populations, and not progress towards health outcomes.</p> <p>There was also a lack of consistency in the way the LHW-MIS was presented and information reported, increasing the difficulty in making direct comparisons across regions.</p> <p>This problem has limited the ability of the Evaluation to use the LHW-MIS, although we do use the data contained within the LHW-MIS where its accuracy is validated by triangulation with other data sources.</p>

5 Findings

The purpose of this section is to summarise the Evaluation findings, organised according to UN/OECD DAC evaluation criteria. The EQs were agreed during the Inception Phase and summarised in our evaluation matrix articulated in Table 2.

5.1 Relevance and design

5.1.1 To what extent does the programme address the needs, priorities, and rights of marginalised and vulnerable children, women, and men in programme areas?

Where the LHWP is operating, it does generally address the needs of marginalised and vulnerable women and children. However, the extent to which it does is compromised across all regions by: (i) the lack of an explicit focus on geographical areas and socio-economic groups with the greatest need; (ii) an increasing focus on immunisation relative to other health, health education, and nutrition needs; and (iii) management and resourcing problems.

The original mission statement of the LHWP indicated a clear objective to support poor and vulnerable households: ‘Promoting Health; Reducing Poverty ... by bridging the gap between Health Services and Communities by providing high quality integrated health services through LHWs at the doorsteps of target communities’. In some cases, provinces have updated this mission statement,³² but still retain the objective of serving poor and vulnerable communities.

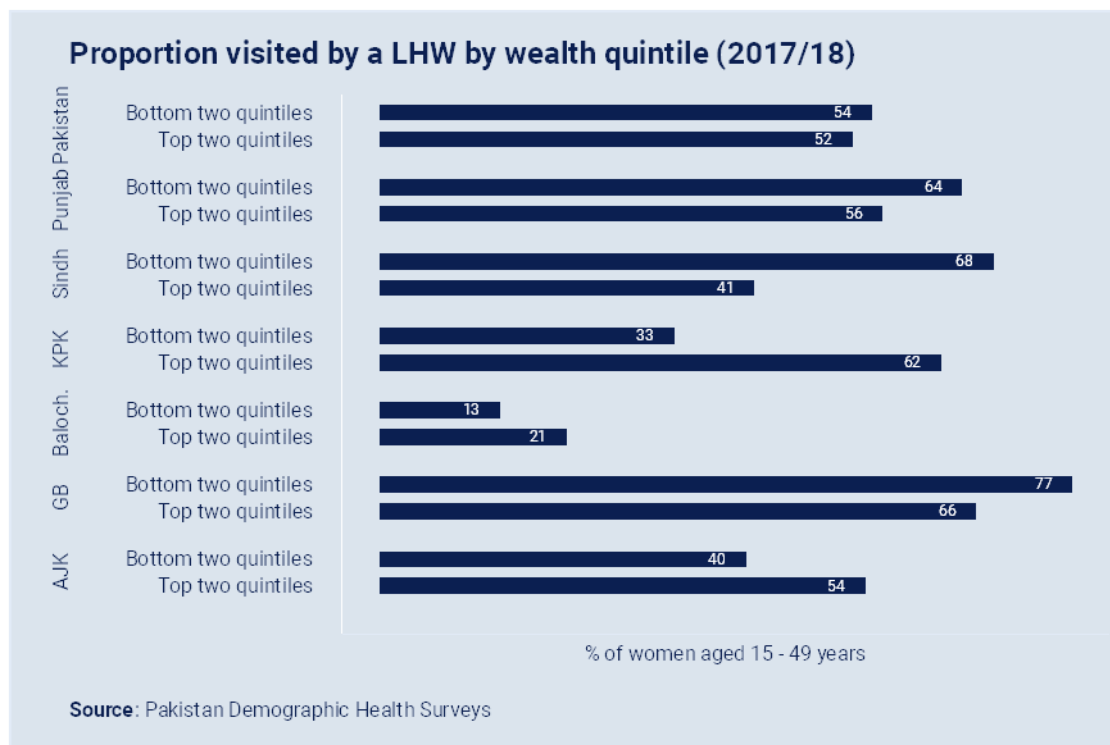
We assess this objective by comparing the proportion of women who were visited by an LHW in the 12 months prior to the Pakistan DHS 2017/18, comparing women who were in the bottom two quintiles of the DHS wealth with those who were in the top two quintiles. Despite the articulated objectives of the programme that it should provide access to the poor, Figure 14 suggests that the programme has not succeeded in providing pro-poor access to healthcare, with relatively equal proportions of women in the bottom two quintiles of the wealth index having been visited by a LHW as compared to women in the top two quintiles.

In some provinces, in particular Sindh and to some extent Punjab and GB, the LHWP does appear to be providing pro-poor access to health with significantly larger proportions of those in the bottom two wealth quintiles having been visited by an LHW. However, in other provinces, in particular in KP but also in Balochistan and GB, the LHWP appears targeted heavily at those in higher wealth quintiles, suggesting strongly

³² For example, in Punjab the goal of a new integrated programme is to ‘Improve the health outcomes among women, children and newborns by enhancing coverage and providing access of health and nutrition services to the poor and vulnerable in rural and less developed urban areas...’ Government of Punjab (2018).

that the programme is not being targeted at the most vulnerable or marginalised groups.

Figure 14 Proportion visited by an LHW by wealth quintile (2017/18)



To a large degree, this relates to the selection criteria of LHWs, which require that an LHW should have completed at least matriculation (eight years of education) and that she should live in the community that she serves. This excludes communities that have poorer-than-average access to education services, with the Quantitative Study completed for this Evaluation demonstrating that there is a high degree of correlation between average levels of wealth and average levels of education.

The general lack of pro-poor targeting is compounded by the finding that no province had met its population coverage target (see Section 5.2.1), owing to a general freeze on recruitment (with the exception of KP) following the regularisation of LHWs.

This Evaluation also finds evidence of a diversion of resources away from the core functions of the LHW (see Section 5.2.2), with a particular emphasis on polio programming. As LHWs divert increasing levels of effort into other programming, this dilutes their ability to focus on their core RMNCH functions, despite the obvious need demonstrated by the current poor performance on a range of RMNCH indicators described in Section 5.2.1.

Despite these findings, in communities where the LHP is operating, it appears to be meeting the needs of marginalised and vulnerable women and children. District Case Studies completed as part of this Evaluation indicate that in communities served by the LHP women tend to have limited mobility, restricting their ability to travel to health facilities – as well as poor access to financial resources to pay for transport to get there

– even when they were in reach of their communities. In addition, Quantitative Study reports finds that for those that the programme reaches, the observed impacts of the programme are stronger for poorer households.

Strength of the evidence – Strong: the Pakistan DHS is a nationally representative survey which provides clear evidence of the lack of pro-poor targeting by the LHWP.

5.1.2 To what extent is the LHWP an appropriate instrument to achieve the national and provincial RMNCH objectives?

The LHWP plays a central role in RMNCH policy across all regions. Stakeholders both within and outside the government consider it a highly effective and appropriate instrument when it is appropriately resourced and managed.

The LHWP, when appropriately resourced and managed, has been proven to deliver high-quality RMNCH services to its served population. The Fourth Evaluation of the LHWP in 2009³³ found that the programme had effectively managed a large-scale expansion of the programme without undermining its impact – a substantial achievement. The Evaluation found that the LHWP had substantial positive impact on key health indicators, including family planning, ANC, neo-natal care, and immunisation, with a greater impact for poorer households. This view was supported by a wide range of both government and non-government stakeholders interviewed as part of this Evaluation, who perceived the LHWP to play a pivotal role in supporting progress on RMNCH objectives, reaching communities that would otherwise have little or no access to healthcare.

However, the LHWP faces critical challenges following devolution and the regularisation of LHWs that threaten its ability to achieve national and provincial RMNCH objectives. The Fourth Evaluation of the LHWP identified a number of measures that needed to be addressed to ensure the continued impact of the programme. These measures included: ensuring effective LHW recruitment and retention; LHW supervision and performance management; training regimes (core and refresher); district-level management; and supplies of medicines and equipment.

As Sections 5.2 and 5.3 will demonstrate, gaps in funding that followed devolution, and that were exacerbated by the regularisation of LHWs, have meant that very little, if any, progress has been made in addressing these measures in the majority of provinces. As a result, while the LHWP has been proven to be an appropriate instrument to achieve national and provincial RMNCH objectives, the challenges currently faced by programme undermine its ability to deliver on this promise.

³³ OPM (2009a).

Strength of the evidence – Strong: when appropriately resourced and managed, a number of independent evaluations have demonstrated robustly that the LHWP has the capacity to deliver national and provincial RMNCH objectives.

5.1.3 Are the federal and provincial roles in LHWP clear and appropriate and how have they changed since devolution?

While in principle there is considered to be a federal level role in coordination, information sharing, and oversight, across regions this is not being fulfilled, and was not fulfilled even while federal funding continued. Federal funding has now ended with the exception of funding for AJK, GB and ICT. This situation was regarded as appropriate by government stakeholders in Punjab. Most stakeholders elsewhere considered there was an unfulfilled role in information sharing and learning.

Since devolution, the federal level has been limited to coordination, information sharing, and oversight. Interviews conducted at the federal level revealed that the envisaged functions were initially hindered by long delays in the re-establishment of the Ministry of Health into its current form as the M/o NHR&C. Since the establishment of the M/o NHR&C, the ministry has engaged in a number of activities that are supportive of coordination between the federal and provincial levels. The M/o NHR&C developed a National Vision for RMNCAH³⁴ that included, as its first priority in a Ten Point Priority Agenda, the improvement of access to and quality of RMNCAH primary care, placing the LHWP at the centre of its response. This identified 38 priority districts for RMNCH through a consultative process.

The Ministry also established, in 2014, an Inter-Ministerial Forum chaired by the Federal Minister of Health and to which Provincial Ministers of Health, Population Welfare, and Planning and Development were invited. This forum provided a platform for the federal and provincial levels to coordinate on health-related issues.

However, while this forum sometimes included the LHWP as an agenda item, a dedicated forum for the LHWP programme to enable coordination with the provinces was not established; nor were there any quarterly review meetings with the territories whose PSDP is reflected in the M/o NHR&C programme.

The LHW-MIS of Punjab, Sindh, and KP are linked to the federal-level Health MIS. However, due to gaps in capacity and funding, this data has not been compiled to enable analysis that would enable the federal level to fulfil its coordination and oversight role. However, the establishment of the HSPIU, which is expected to be strengthened through Grant Funding from USAID, will increase the capacity of the M/o NHR&C to fulfil this role.

³⁴ Government of Pakistan (2016c).

In Punjab, government stakeholders reported that they were satisfied with the role of the federal government, which they defined as limited to information sharing and coordination. Provincial government stakeholders reported that the devolution of full strategic and management responsibilities to the province enabled greater flexibility to tailor the design of the programme to the demographic needs of the province; this had also enabled innovation, such as the integration of the LHWP into the IRMNCH and Nutrition Programme.

Across the other provinces, there was a clear consensus that the role of the federal level was in coordination and information sharing, while full planning and execution roles had been shifted to the provinces. However, government stakeholders across all provinces asserted that the federal level had not been fulfilling its function. Provinces had the expectation that this coordination role would be fulfilled through holding quarterly review meetings, a practice that all regions – with the exception of GB and ICT – had claimed had ceased all together.

Stakeholders across Sindh, KP, Balochistan, and AJK made the strong recommendation for the revival of this review process, claiming that there was a real value in having a consistent forum to share the progress and challenges faced within the provinces, to learn from the best practices of other provinces, as well as to better connect with multi-lateral agencies through the federal level. The latter point was defined as particularly important as it would facilitate securing additional funding for the programme.

The Fourth Evaluation of the LHWP³⁵ identified that the impact of the LHWP could be enhanced by paying critical attention to ensuring the effective delivery of both core and refresher training to LHWs. We present evidence in Section 5.3.4 that in all provinces, with the exception of Punjab, the core curriculum of LHWs has not been updated since devolution, and that refresher training delivered by the programme has ceased. In this regard, a strong recommendation put forward by the government stakeholders in Sindh, KP, and Balochistan was for a federal role in the development of a uniform curriculum for LHWs.

Strength of the evidence – Strong: there is clear consensus from government stakeholder provinces that the federal level was failing to deliver on its post-devolution mandate of coordination and information sharing.

5.1.4 To what extent has the selection of areas for the LHWP implementation been appropriate to achieve the stated objectives?

In none of the regions was there a systematic and evidence-based approach to the selection of areas for LHWP implementation in relation to health needs. The selection of areas is found to be determined by proximity to where LHWs have

³⁵ OPM (2009a).

already operated, where qualified LHWs can be recruited, or where access is relatively easy; there is also politically driven recruitment. This is likely to have generated a sub-optimal selection of areas in relation to need and potential across all regions.

The LHWP was envisaged to achieve stated RMNCH objectives by serving as a bridge between communities with poor access to health services and healthcare facilities in rural areas and urban areas.

However, across all regions of Pakistan it was reported by government stakeholders that the selection of new areas for coverage by the LHWP was not based on an adequate mapping of need, which would require a geo-referenced mapping of areas to identify those areas with the poorest health outcomes, lack of access to healthcare facilities, and high rates of poverty. This would allow the programme to expand into areas that had the greatest need, and potentially where the programme could have the greatest impact first.

In reality, government stakeholders across all provinces reported that the selection of new areas for LHWP coverage were in fact determined by the ease with which the programme could be expanded. While this was critically dependent on the presence of suitably qualified potential LHW recruits, stakeholders reported that this meant that the programme expanded outwards from areas in which it was already serving, or in locations in proximity to frontline care facilities.

This is evidenced in KP, the only province in which recruitment of LHWs has recently taken place, in which micro-planning documents provided to the Evaluation Team allocate the responsibility of estimating additional numbers of LHWs to DHOs, but provides no additional evidence to support DHOs in identifying areas which have the greatest need for LHWs and which, therefore, should receive priority.

In other provinces, the identification of new areas to serve under the LHWP had not been given priority, owing to the general freeze on new recruitment that followed the regularisation of LHWs.

Finally, it was noted across the majority of provinces that politically driven recruitment had influenced the allocation of LHWs to certain districts over others, which stakeholders reported as in part explaining high variation in coverage.

Strength of the evidence – Moderate: while there was a high degree of consensus that the selection of areas for expansion was not evidence based, this Evaluation does not have geo-referenced data at district and sub-district level to identify with accuracy whether the selection of areas is fully appropriate to the stated objectives.

5.2 Effectiveness

5.2.1 To what extent has the programme achieved its objectives/outcomes?

Achievement of RMNCH outcomes

PC-Is and Health Sector Strategy Documents articulate explicit health outcome targets for the LHWP. Specific targets across the regions of Pakistan have diverged since devolution following the 18th Amendment. A review of performance against health outcome targets presents a picture of mixed achievement across the various health outcome domains and across the regions of Pakistan. Performance against the Family Planning and Infant and Young Child Care targets, with a few exceptions, demonstrated particularly poor performance. On the other hand, performance against the Maternal Health Care domain was more encouraging.

It is challenging to assess LHWP performance against health outcome targets. In principle, the LHWP managers should be able to track the performance of the programme by using data collected and fed into the LHW-MIS. However, Regional Reports produced for this Evaluation consistently remark on concerns regarding the quality of the data contained within the LHW-MIS, noting in particular a lack of adequate quality-control mechanisms. Furthermore, a rapid assessment of the LHW-MIS reported in the Quantitative Study of this Evaluation indicated systemic issues around incompleteness of information and issues around consistency of data.

To cross-check performance against targets as recorded by the LHW-MIS, this Evaluation uses data from the Pakistan DHS (2017/18) and assesses the health outcomes of women and children who were recorded as having been visited by an LHW within the 12 months preceding the survey. The outcome of this exercise is recorded in our Quantitative Study, with the results presented in Annex D.

This measures the performance of the LHWP against three domains: family planning; maternal healthcare; and infant and young child care.³⁶ At an aggregate level, there is significant variation in the performance of the programme across the regions of Pakistan. Punjab and AJK are higher performing, having achieved, or being close to achieving, approximately 70% of health outcome targets. KP, Sindh, and GB are middle performing, having achieved, or being close to achieving, approximately 50% of health outcome targets. Balochistan is the worst performer, having achieved, or almost achieved, only 17% of health outcome targets.

³⁶ Family planning indicators: Contraceptive Prevalence Rate. Maternal healthcare indicators: TT2-immunisation; ANC visits; skilled birth attendance; institutional delivery; postnatal visits within 24 hours. Infant and young child care indicators: early breastfeeding; exclusive breastfeeding; fully immunised children aged 12–23 months; proportion of children under five years stunted or wasted.

There is also significant variation in the performance across the three health outcome domains. This Evaluation finds that no region had met its family planning targets, though our Quantitative Study notes that this may be as a result of overly ambitious target setting.³⁷ Performance on the maternal healthcare domain is more encouraging, with all regions having met, or being close to meeting, the majority of indicators. The outlier in this case is Balochistan, which met no maternal healthcare target, and came close to achieving target in only one indicator. Performance on the infant and young child health domain was also found to be poor where, with the exception of Punjab and AJK, regions failed to meet the vast majority of indicators. Performance in this domain was particularly poor against targets for the early initiation of breastfeeding and exclusive breastfeeding.

Despite this, the Evaluation finds that there has been improvement in outcomes in the majority of provinces. When compared to the performance noted for those visited by LHWs in the 12 months prior to the DHS 2012/13 survey, Annex D notes improvement in performance, particularly against some maternal healthcare indicators. This includes the proportion of women who have received at least one ANC visit, the proportion of women who had a skilled birth attendant present, the proportion of women who had institutional deliveries, and the proportion of women who received a postnatal visit within 24 hours of delivery. The Evaluation finds no change in the CPR, and a moderate improvement in the proportion of children fully immunised, though only in Punjab and Sindh.

Strength of the evidence – Moderate: consistent concerns over quality control procedures and completeness of data in the LHW-MIS expressed in Regional Reports and the Quantitative Study make it challenging to use this source of data to accurately track the performance of the LHWP against health outcomes. However, the Pakistan DHS (2017/18) records whether women and children have been visited by an LHW and provides a high-quality source of data to track performance against indicators.

Achievement of operational objectives

Since devolution there has been some divergence in the reported LHWP operational objectives across the regions of Pakistan. However, the common operational objective relates to the expansion of LHWP coverage across the regions. This Evaluation reports declining numbers of LHWs in almost all regions of Pakistan, which has led to a decline in coverage in some regions of Pakistan, with no region of the country having met its population coverage target.

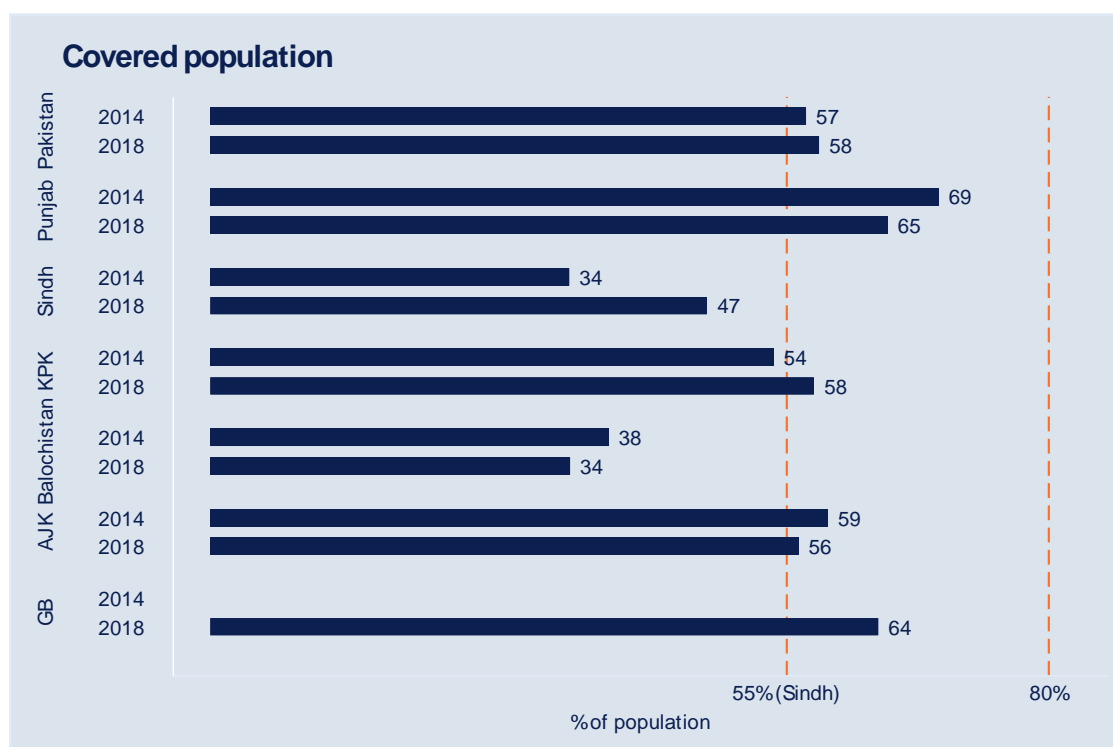
The LHWP also sets targets for supervision tracked through the LHS to LHW. We find that the majority of regions of Pakistan meet targets with the exception of Sindh and KP. However, the degree to which supervision happens is limited substantially by the availability of funds for transport.

³⁷ The mean target for Contraceptive Prevalence Rate was 50%, almost double the national average reported in the Pakistan DHS 2017/18.

A review of the LHW-MIS over the period 2014–18 reported in the Quantitative Study of this Evaluation indicates a decline in overall numbers of LHWs across Pakistan of 4%. This was reflected in a decline in absolute numbers of LHWs in all regions of Pakistan, with the exception of KP, where LHW numbers increased by 18% due to the recruitment of almost 4,000 contract workers.³⁸ Balochistan suffered the most severe decline in overall LHW numbers by 21%, a loss of more than 1,000 LHWs as reported by the LHW-MIS. This is despite the Balochistan PC-I estimating that there was a need to recruit 500 LHWs per year to 2022 in order to meet the LHWP coverage targets in that province.

Figure 15 reports the coverage rates of the LHWP across the regions of Pakistan for the period 2014–18. At the national level, despite explicit targets to increase coverage, this Evaluation finds a stagnation in the overall population coverage across Pakistan at just under 60% for the period. Across the regions of Pakistan, we find that no region has met its target, with coverage rates significantly below target in the majority of regions, with Sindh the closest to its relatively more modest target of 55% population coverage. We also find marginal decreases in population coverage in all regions, with the exception of KP and Sindh.

Figure 15 LHW-MIS: Covered population³⁹



The magnitude of the increase in population coverage in Sindh, as described by the LHW-MIS, should be treated with caution. A rapid review of the LHW-MIS reported in

³⁸ Through the Integrated Health Programme, additional LHWs were contracted under the same terms and conditions prior to the registration of LHWs.

³⁹ Coverage rates for GB for 2014 were not available to the Evaluation Team.

the Quantitative Study of this Evaluation noted that total population figures for Sindh, integral to the calculation of coverage rates, had not been updated in the period 2014–18. In other words, the total population recorded in the LHW-MIS did not account for any population growth in that province. Taking population growth into account, the use of data from the Pakistan Census 2017 would reduce total LHWP coverage in Sindh to 42% in 2018.

In terms of the supervision of LHWs the programme sets a common target of a 1:25 ratio of LHSs to LHWs. Evidence taken from the LHW-MIS, reported in the Quantitative Study of this Evaluation, indicates that all regions of Pakistan have hit this target, with the exception of Sindh, which had a ratio of 1:29, and KP, which had a ratio of 1:26. However, evidence presented in the Regional Reports and in the District Case Studies notes significant challenges to the implementation of supervision visits by LHSs relating to funding available for transport, meaning that these visits were becoming increasingly infrequent.

Strength of evidence – Strong: LHW numbers are mostly well reported allowing an accurate assessment of performance on total population coverage targets.

5.2.2 What were the major factors influencing the extent to which objectives/outcomes were achieved?

There are a number of significant and systemic challenges faced by the LHWP that limit its ability to meet its health outcome targets and programme objectives. These include: a freeze on recruitment following the regularisation of LHWs; increased LHW responsibilities beyond core functions (in particular, polio programming); significant funding deficits, which have created shortages of supplies and equipment; and a significant reduction in the level of training received by LHWs.

Challenges listed above that limit the ability of the LHWP to perform effectively are discussed in turn below.

Regularisation and the general freeze on recruitment affects coverage

Regional Reports produced for this Evaluation note that the regularisation of all LHWP staff followed an order from the Supreme Court of Pakistan (7 September 2010), with the actual start of implementation varying across the regions of Pakistan but taking place between 2014 and 2017.⁴⁰ Following regularisation, LHWP staff were declared a ‘dying cadre’ across Pakistan (although this was reversed in 2017 in Punjab). The implications of this decision involved a freeze on recruitment of any new LHWs, directly compromising the ability of the LHWP to expand its coverage. In fact, as evidence in Section 5.2.1 indicates, total numbers of LHWs have decreased since regularisation

⁴⁰ Regularisation of LHWs was implemented in different years: Balochistan (2014); GB (2014); Punjab (2015); Sindh (2015); Khyber Pakhtunkhwa (2016); AJK (2017).

was implemented, with attrition resulting from resignations, terminations, and the deaths of LHWs.

KP was the only province that managed to increase the number of LHWs, doing so by using donor funding of the IHP to hire LHWs on a contract basis, under similar terms as applied to all LHWs prior to regularisation.

Expansion of LHW responsibilities

The role of an LHW has increased on a number of dimensions, some that are formally articulated in updated PC-Is, and some that are not; however, all threaten to dilute the ability of an LHW to perform her core functions. The first relates to an expansion of the catchment area of an LHW as related to the total population that she is expected to serve, which has increased from a maximum of 1,000 residents to 1,500.

More importantly, there has been a significant expansion in the expectation of the involvement of LHWs in programming that is outside her core responsibilities – in particular, involvement in polio campaigns⁴¹ – although LHWs are often expected to be involved in other campaigns, such as relating to dengue or malaria.

As the eradication of polio has been declared a national priority,⁴² LHWs have become increasingly involved in supporting polio campaigns. As reported in the District Case Studies conducted for this Evaluation, polio campaigning in particular can take an LHW away from her mandated catchment area for significant periods of time. In fact, consultations with government and non-government stakeholders reflected in the Sindh Provincial Report indicate that polio duties can take up to 50% of a LHWs time. LHWs interviewed during the District Case Studies noted both an increase in the frequency of polio campaigning but also the difficulties of working outside their communities, in areas where they were unfamiliar to the local population.

Polio campaigns were initially conducted only twice or thrice a year, but in the last 4 to 5 years, it is almost every month. Many of us are assigned areas outside our catchment areas which is quite difficult because people don't know us and we come across resistance and rude behaviour by some of the families. Naturally, now if we have to participate in such campaigns and also perform our regular duties, it becomes very difficult. (LHW, Rahim Yar Khan District, Punjab)

People in areas other than our community don't know us and in some areas don't even approve of women doing this kind of work. We have a tough time convincing some families to let us administer polio drops to their children. Many times we encounter hostile males who threaten us and use rude language. We report such cases otherwise we just leave such homes. (LHW, Kashmore District, Sindh)

⁴¹ However, the Evaluation notes that polio immunisation has been included in the core training of LHWs in Punjab following the integration of the LHWP into the IRMNCH&N programme.

⁴² Government Pakistan (2018c).

This shift in focus directly compromises the ability of an LHW to discharge her other duties, and thus places a limiting factor on the extent to which the LHWP can be expected to make progress across all of its health outcome targets.

Shortage of supplies and equipment

Consistent issues with the LHWP logistics management system reported in Section 5.3.4 of this report have resulted in significant gaps in the provision of basic supplies and equipment. Respondents to both the Regional Studies and the District Case Studies note that this has led to significant stock-outs, including for contraceptives, basic medicines, and even the LHW toolkit.⁴³ Such stock-outs hinder the ability of a LHW to perform her core duties, and limit the extent to which the LHWP can be expected to meet its health outcome targets.

Irregularity of refresher training

Prior to devolution the Fourth Evaluation of the LHWP⁴⁴ found that training had been carried out reliably for most LHWs, with all LHWs having completed the full-time, three-month basic training course and 96% having received at least one refresher training course in the last year.

However, since devolution there have been significant gaps in the ability of the provinces and regions to deliver refresher training. This Evaluation's Regional Reports indicate gaps in refresher training across all provinces. In some instances, notably in Sindh, Balochistan, GB, and AJK, the practice of refresher training delivered by the LHWP itself has halted completely since devolution, with respondents to provincial study visits citing gaps in funding as the main factor. On the other hand, in Punjab and KP refresher training has recently restarted (in 2017 and 2018 respectively), with updated training curricula in each province.

In provinces where the practice of refresher training is not being implemented by the LHWP itself, the Regional Reports completed for this Evaluation indicate that a multitude of donors – including UNICEF, the World Health Organization, and a variety of national organisations – have conducted training sessions with LHWs. However, it was acknowledged that in general these training sessions were tailored to the specific needs of the donor and were not aligned to the LHW curriculum, nor to the full suite of a LHW's core functions.

A lack of regular refresher training directly compromises the quality of care that can be expected from an LHW, limiting the extent to which the LHWP can be expected to achieve health outcome targets.

Strength of evidence – Strong: these findings are well triangulated across multiple sources of evidence.

⁴³ This includes basic medical equipment essential to the LHW in the performance of her core functions (for example, weighing scales, blood pressure apparatus, thermometers, and pregnancy kits).

⁴⁴ OPM (2009d).

5.2.3 To what extent does the LHWP work, for whom, where, in what respects, and how?

The LHWP has generally worked for those women and children that it has reached, provided that resources have been available, especially for family planning, some aspects of maternal care, and polio immunisation. In Sindh and GB, and to some extent in Punjab the LHWP is reaching marginalised areas, but this is not the case elsewhere. The incomplete and unsystematic geographic coverage of the programme means that significant numbers of high priority areas are not served in all regions of Pakistan.

Significant funding gaps following the regularisation of LHWs has meant that no region of Pakistan has met its population coverage targets, as we demonstrate in Section 5.2.1. Furthermore, this Evaluation finds evidence that the areas that the LHWP is not systematically using evidence to target priority areas for roll-out of the LHWP (Section 5.1.4); this has meant that the LHWP is not currently explicitly targeted at the most marginalised communities (Section 5.1.1).

However, in communities that the LHWP does serve we do find evidence that the LHWP is geared towards the needs of the more marginalised members of the community. In many parts of Pakistan, the LHWP is a worker in a context of limited female mobility. Social life is characterised by a traditional patriarchal family system, where travel is a potentially risky activity for women as it may lead to unwanted interactions with men and a perceived loss of honour.⁴⁵ In this regard, interviews with female community members conducted during the District Case Studies indicate that the LHWP model of providing healthcare at the doorstep can overcome this barrier.

The LHW is very helpful and she brings the vaccinator to our doorstep, which we really appreciate. (Women's Groups, Rural Kashmore, Sindh)

While the Evaluation reports in Section 5.1.1 that the programme is not explicitly targeting the most marginalised communities, the Evaluation does find evidence that within communities that are served by the programme, an individual LHW is targeting more marginalised households within that community. To demonstrate this, Figure 16 reports the average DHS wealth index score for households that reside in LHW-served communities, disaggregated by whether they had been visited by an LHW or not. While differences in wealth scores are small,⁴⁶ this shows that on average across Pakistan (and for all regions, with the exception of Balochistan and AJK), households which have been visited by an LHW have lower wealth index scores than households which have not been visited by an LHW. This strongly suggests that individual LHWs are

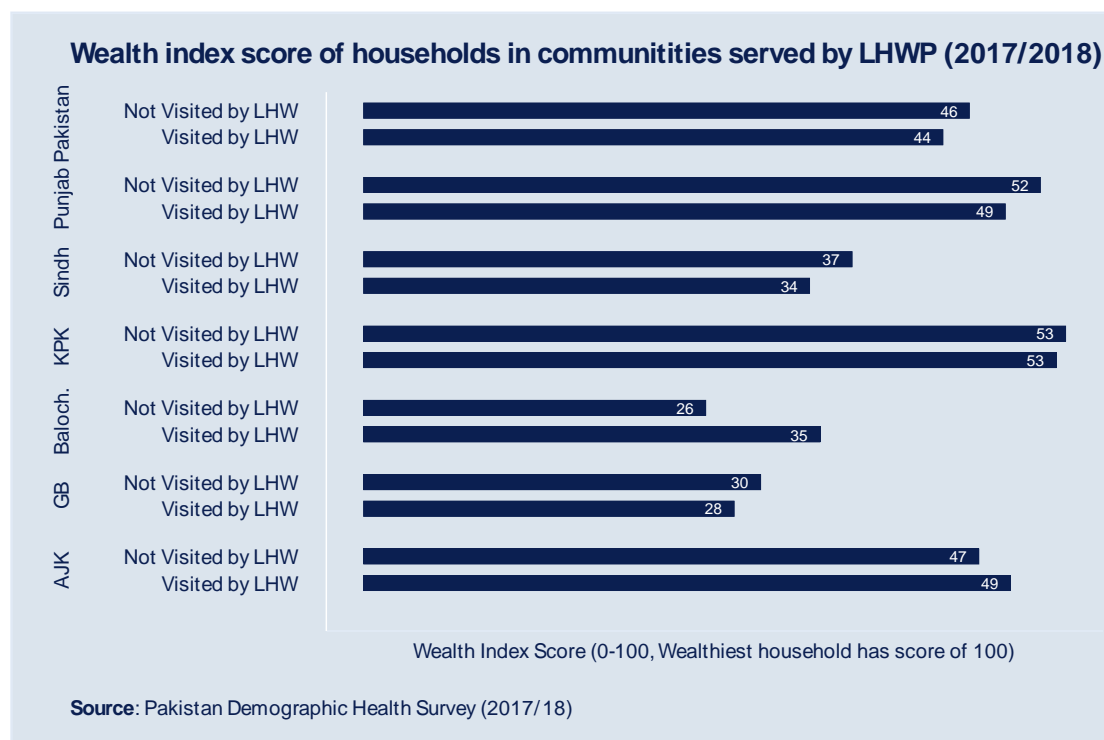
⁴⁵ Adeel (2016).

⁴⁶ As would be expected, given that there tends to be a high level of correlation of wealth *within* communities.

targeting poorer households within her catchment area, even if the programme on the whole does not have a pro-poor targeting.

However, Figure 16 provides worrying evidence for Balochistan and AJK. Section 5.1.1 provides evidence that the LHWP does not target the most marginalised communities in each region. Figure 16 suggests that in these regions, even within communities served by the LHWP, the most marginalised are not being proportionately targeted by individual LHWs.

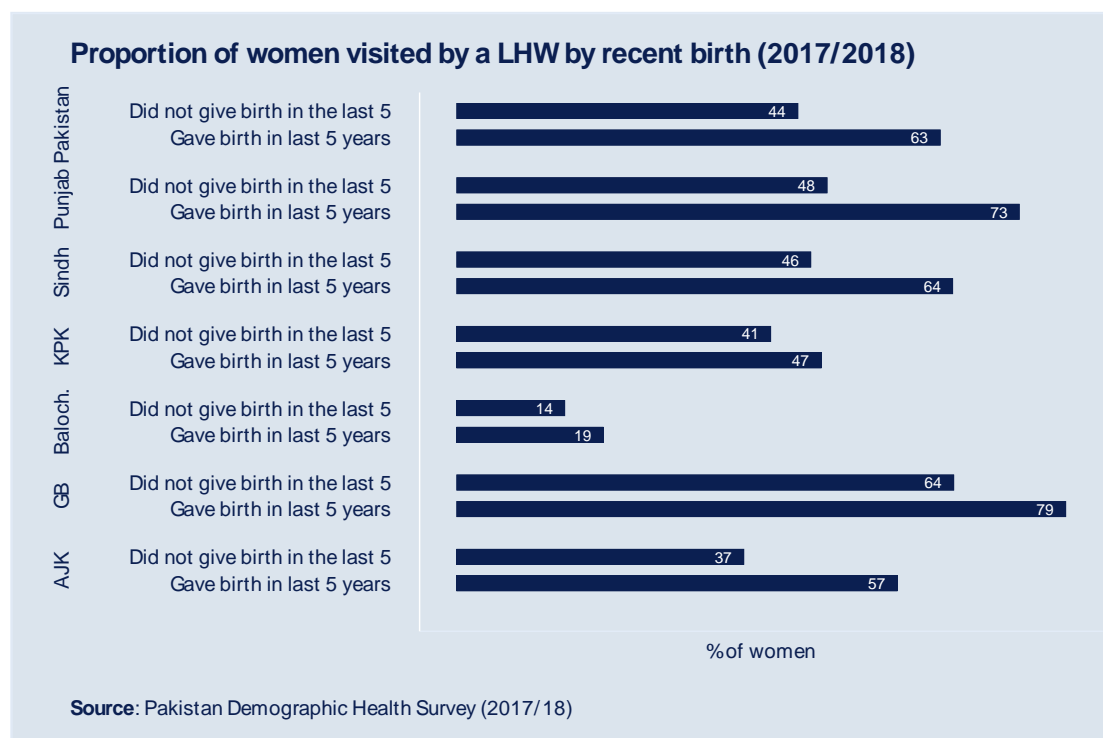
Figure 16 Wealth index score of households in communities served by LHWP



Section 5.4.1, where the impact of the LHWP on health outcomes is discussed, provides further evidence to support the hypothesis that in areas served by the LHWP, poorer households on average benefit the most. Section 5.4.1 demonstrates that the observed impact on health outcomes in the domains of family planning and maternal care are stronger for households which are in the poorest wealth quintiles, compared to those in higher wealth quintiles. This is suggestive that the LHWP is effective in relieving supply side constraints for poorer households, as well as reflective of an individual LHW's focus of effort on this group.

In terms of those most likely to be targeted by LHWs, and as would be expected of a programme whose core focus includes RMNCH interventions, Figure 17 demonstrates that women who have recently given birth are significantly more likely to have been visited by a LHW than those who have not, on average for Pakistan as well as across all regions. This suggests that LHWs focus their efforts on their core clients, which is likely encouraged by specific targets related to referrals for deliveries.

Figure 17 Proportion of women visited by an LHW by recent birth



However, as is reported in Sections 5.3.4 and 5.3.5, there is significant evidence of failures in various systems that enable the mechanisms⁴⁷ which allow a LHW to effectively perform her duties. This is a systemic issue for the LHWP across all regions following the regularisation of LHWs, which has diverted funding away from operational costs. In addition to limiting the ability of the programme to expand its coverage in almost all regions, this has meant that across Pakistan systems such as monitoring, training and capacity building, and logistics and supplies, have been underfunded and have not performed optimally since regularisation.

The implications of this for the mechanisms by which an LHW can effectively deliver a high-quality health services for her community are discussed in Section 5.3.5. The consequent effects on the potential for the LHWP to have an impact on final outcomes are discussed in Section 5.4.1, where this Evaluation finds that while the LHWP continues to have an impact on outcomes related to the family planning and maternal care domains, this impact is diminished in relation to the Fourth Evaluation of the LHWP⁴⁸ conducted in 2009 in terms of the number of dimensions in each domain that the LHWP continues to affect positively.

Strength of the evidence – Strong: when adequately resourced and targeted, the programme has demonstrated the ability to provide high-quality care to the marginalised and immobile communities that it serves. This is under threat with the

⁴⁷ The evaluation's ToC presented in Section 2.5 describes these three mechanisms: knowledge, motivation, and client engagement.

⁴⁸ OPM (2009a).

under-funding of operational expenditure and the inability to expand to the most marginalised communities.

5.2.4 What are the main features of the intervention towards the realisation of HR&GE?

The LHWP was not conceived with an explicit HR&GE approach to its design or implementation. However, the LHWP does seek to support the desire to achieve UHC through the delivery of doorstep PHC, as well as to address the specific health needs of women and children. Moreover, this Evaluation finds evidence that the LHWP is supportive of the empowerment of LHWs and LHSs.

Access to PHC in Pakistan is not mandated in the Constitution of Pakistan as an obligation of the State. Furthermore, a review of programme planning documents for this Evaluation concludes that the LHWP is not designed with a specific approach to HR&GE, nor are there specific implementation plans that would enhance this agenda.

However, by design the programme is supportive of HR&GE in a number of dimensions. While access to PHC is not an obligation of the state, the LHWP, in the areas that it currently serves, acts as a bridge for communities with no access to FLCFs and is supportive of a continuum of care in the RMNCH domain. As discussed in Section 5.2.3, in a context of limited mobility of women this is a crucial aspect of the programme, one that is supportive of reducing gender inequalities in access to health.

Further design aspects are supportive of gender equality. Recruitment criteria of the LHWP ensure that an LHW is recruited from within the community that she serves, and crucially that all LHWs are women. This both increases the likelihood that an LHW will be accepted by her community, but increases the acceptability of LHW patient visits, including at times when the husbands of beneficiaries are not in the household.

Significant gender inequalities also exist in the realisation of sexual and reproductive rights in Pakistan.⁴⁹ In this regard, the LHWP that holds family planning as one of its core domains of focus is well placed to make gains towards the realisation of gender equality. Section 5.4.1 provides evidence that the LHWP has been instrumental in changing the attitudes of both men and women towards family planning; it also shows that the LHWP is continuing to have an impact on the CPR.

Finally, this Evaluation finds evidence that the LHWP is supportive of the empowerment of both LHSs and LHWs in terms of improved economic status, and in terms of a greater social status in the communities where they work.

Strength of the evidence – Strong: while the LHWP does not have a specific HR&GE approach, key design features are supportive of both aspects of HR&GE.

⁴⁹ United Nations Population Fund (2017).

5.2.5 How effectively have various government programmes and departments who use LHWs to achieve their sectoral objectives co-ordinated with each other?

The LHWP has been formally integrated into broader health programmes in KP and Punjab but in both cases this process is incomplete in effective management terms. Coordination was considered by stakeholders to be effective in AJK but in all other regions significant coordination problems were noted.

In Punjab the integration of the LHWP into the IRMNCH and Nutrition Programme has led to improved coordination between related health departments and encouraged the practice of regular intra-departmental meetings, which includes the regular gathering of district coordinators from all 36 districts of Punjab to share issues and discuss progress. However, all stakeholders interviewed for the Regional Studies reported that there was still a lack of clarity on the division of roles between frontline staff, and reported a need to strengthen the functional integration at that level. In particular, there appeared to be a lack of coordination – indeed, there was active competition – between LHWs and CMWs, which appeared to derive from the facility-based targets for referrals that are part of a LHW's performance management. This has led to LHWs referring their cases to FLCFs, particularly with the advent of the 24/7 BHU initiative, rather than referring them to CMWs.

Similarly, in KP the LHWP has been integrated into the IHP. This has provided administrative integration between the LHWP, the EPI, and MNCH. Planning documents for the IHP also articulate the 'PRISM model', which defined a model for horizontal linkages between LHWs and CMWs. However, government stakeholders interviewed for the Regional Studies report that this has not resulted in actual coordination between LHWs and CMWs for similar reasons as in Punjab, i.e. that LHWs were set targets based on referrals to FLCFs and not to CMWs, creating competition between the two cadres rather than cooperation, as had been envisaged.

In other regions where the LHWP remained a standalone programme, and had not been integrated, government stakeholders consistently reported a lack of mechanisms for coordination between key stakeholders, in particular the Health Department, the Population Welfare Department, and the PPHI.

The implications of this lack of coordination are felt on the ground. The majority of LHWs interviewed as part of the District Case Studies in all districts visited complained about the discourteous or irresponsible behaviour of staff at FLCFs, now managed across Pakistan by PPHI. LHWs reflected that some staff members were more unwelcoming towards patients that they had brought or referred to FLCFs.

Most of our patients are seen by LHWs even if the patient needs to consult some other service provider. Our patients seem to be given low priority by the facility staff, although because of us most of the patients visit these facilities.
(LHW, Rahim Yar Khan District, Punjab)

Sometimes when LHWs bring women for delivery, doctors send them back saying that there is still time left, and they have to come back again. Facility

staff do not want to cooperate with them. LHWs want that they should be given preferences, they say they are not allowed inside when it's crowded. I am a member of staff, we should be allowed to come. (LHS, Jhelum District, Punjab)

AJK was the exception, where a wide range of government stakeholders reported that there were strong inter-departmental linkages. These appear to have been facilitated by regular inter-departmental meetings. As a result of this coordination, it is now envisaged that LHWs are to play a central role in the MNCH Action Plan managed by the Population Welfare Department. This has led to further consideration of the full integration of vertical health programmes related to Family Planning and RMNCH.

Strength of the evidence – Strong: coordination issues are reported across a multitude of stakeholders across various levels of management and implementation.

5.3 Efficiency

5.3.1 How well have resources, both human and financial, been managed to ensure the timely, cost-effective, and efficient attainment of results?

All regions have encountered significant human resource and financial management problems. These were in part attributed to the regularisation process, in particular its impact on costs, leading to salary delays, lack of non-salary resources, and increased resorting to strike action by LHWs. However, human and financial resources even with these constraints have not been optimally managed or deployed.

A poorly planned process of regularisation of LHWs and LHSs has put a great strain on the LHWP in all regions. This process has created significant human resource and financial management problems. From a financial management perspective, the substantial, and largely unplanned, increase in costs resulting from regularisation has put a large burden on the non-development budget in all provinces. In all provinces, this led to a ban on recruitment of regularised LHWs and LHSs, meaning that no province could achieve its target for the expansion of the programme; as this Evaluation reports in Section 5.2.1, this has led to a decline in the overall numbers of LHWs across Pakistan. In response, all provinces have increased the caseload of LHWs from a maximum of a population of 1,000 residents to 1,500, though this was done without a full consideration of the ability of an LHW to provide the same level of service to a larger population.

In turn, as the proportion of the non-development budget devoted to salaries has increased, the available resources for core activities of the LHWP have been squeezed. In particular, the practice of delivering regular refresher training to LHWs has stopped altogether in all provinces, with the exception of Punjab, where this was re-vitalised in 2017 under the Chief Minister's Skill Enhancement Programme for LHWs. In other provinces, no LHWs have been given refresher training by the LHWP

since regularisation, although in some instances sporadic training has been provided through donor-funded programmes.

The regularisation of LHWs has also created significant human resource management challenges. The process of regularisation was not accompanied by the definition of an adequate service structure, nor a careful assessment of the workload of an LHS or LHW relative to the incentive structure offered to them. District Case Studies implemented for this Evaluation identified that while regularisation had improved job security, the lack of a service structure and the fact that LHSs and LHWs do not receive the same allowances as other government employees, such as pensions or medical allowances, was threatening to undermine the job security and motivation that had derived from the initial regularisation. This is of particular concern given the significant delays in the payment of salaries, due to delays in the release of funds. In response, LHWs have unionised, taking significant strike action, particularly in Punjab.

Regularisation has severely restricted the performance management ability of the LHWP. Prior to regularisation, when poor performers were identified, there was a relatively simple process of terminating the contracts of LHWs who were receiving stipends. Government stakeholders across the regions now identified the termination of poorly performing LHWs as a significant and lengthy challenge. This issue is compounded by concerns of relatively low rates of supervision of LHWs identified in Section 5.3.4 below. In addition, regularisation has left the LHWP across the majority of provinces with an aging population of LHWs. Government stakeholders expressed concern that without new recruitment, this workforce would find it increasingly challenging to perform their core functions, a concern given the increased case load of LHWs.

In response KP, the only province which has increased the total number of LHWs, has reverted to the recruitment of LHWs on a contract basis under terms similar to those provided to LHWs before regularisation.

Strength of the evidence – Strong: deficiencies in human resource and financial management are widely acknowledged across a range of government stakeholders.

5.3.2 To what extent can costs incurred be justified by the results achieved?

Total expenditure per LHW has seen a dramatic increase since the regularisation of LHWs. This Evaluation finds no evidence that this extra expenditure per LHW has been accompanied by increases in coverage, performance, or impact on long-term health outcomes.

Table 5 provides a comparison of how the unit cost per LHW has changed over time, relative to the Fourth Evaluation of the LHWP⁵⁰ conducted in 2008/09. All prices are

⁵⁰ OPM (2009a).

adjusted for inflation, and expressed in 2017/18 prices. The Evaluation Team were not provided with a full breakdown of actual expenditures, and in particular the proportion of expenditures attributable to salaries, in all provinces.⁵¹ Table 5 therefore provides a partial analysis of the current cost efficiency of the programme.

There are three key conclusions to draw from the evidence of this table. First, as a direct result of regularisation, the per LHW cost of delivering the programme has dramatically increased, from PKR 107,794 in 2008/09 to PKR 280,508 in 2017/18 – an increase of 160%. This has been accompanied by an increase in the per beneficiary cost of delivering the programme, from PKR 124 in 2008/09 to PKR 213 in 2017/18 – an increase of 72%. The smaller increase in per beneficiary costs relates to the increase in case load expected of LHWs, from a maximum of 1,000 residents to 1,500 residents over the same period.

Second, this largely unplanned additional expenditure has not been accompanied by an increase in the coverage of the programme, an improvement in performance, or gains in the impact on long-term health outcomes that the programme is having. We note in Section 5.2.1 that coverage of the LHWP in terms of total population covered has stagnated in the period 2014–18, with the exception of KP, with no region meeting their stated coverage targets. Section 5.2.1 also notes that when performance measures against health outcomes are cross-referenced to the Pakistan DHS (2017/18), a number of regions are failing to meet a wide range of health outcome targets. Finally, Section 5.4 does report that the LHWP is still having an impact on some long-term health outcomes for the population that it actually serves. This should be considered a significant achievement given the challenges that the LHWP currently faces. However, Section 5.4 also notes that the range of health outcomes on which the programme is having an impact has fallen since the Fourth Evaluation of the LHWP;⁵² in particular, this Evaluation now finds no impact on the proportion of children aged 12–23 months that have been fully vaccinated.⁵³

Third, for regions where information is available, we find that the proportion of total costs that are devoted to salary expenditure has dramatically increased, from 57% in 2008/09 to between 85% and 97%, depending on the region, in 2017/18. This shift in the allocation of expenditure greatly inhibits the programme's ability to deliver the wide range of activities that are necessary to enable an LHW to effectively perform her core functions.

⁵¹ In KP, the evaluation has expenditure by the IHP, but was unable to secure a release of payments to salaried LHWs that are made directly by the Accountant General.

⁵² Ibid.

⁵³ Although an impact is observed on the proportion of children who have been immunised against polio, reflective to the diversion of effort and resources.

Table 5 LHW unit cost comparison⁵⁴

	2017/18						2008/09 (expressed in 2017/18 prices)		
	Expenditure (PKR Millions)	Total beneficiaries (millions)	Expenditure per beneficiary	Total LHWs	Expenditure per LHW	Expenditure on salaries as a proportion of total expenditure	Expenditure per beneficiary	Expenditure per LHW	Expenditure on salaries as a proportion of total expenditure
Punjab	11,095	71.4	155	44,580	248,878	97%	124	107,794	57%
Sindh	6,376	19.9	320	21,024	303,276	85%			
KP	5,495	16.8	326	13,259	414,400	n/a			
Balochistan	927	3.7	250	4,633	200,071	n/a			
GB	98	1.0	101	1,361	72,006	n/a			
AJK	644	2.5	254	2,963	217,251	96%			
Total	24,634	115.4	213	87,820	280,508	n/a			

Strength of the evidence – Strong: we find compelling evidence of a change in cost structure and an increase in per LHW expenditure. Given that regularisation was applied to all regions, this is strongly indicative of an increase in per LHW cost and changes to cost structure elsewhere.

5.3.3 Has the programme been appropriately funded, and how does this vary between provinces?

In KP, Punjab and Sindh, the LHWP is now appropriately resourced in terms of the funds budgeted, as provincial contributions have increased to offset former federal contributions. Before this, significant funding constraints existed across all regions. Fund releases have been timely since provinces took over funding in Punjab, Sindh, and Balochistan, but not in KP. Funding problems continue in the territories.

Prior to devolution, the LHWP, like all vertical health programmes, had been funded federally through the PSDP, with the Fourth Evaluation of the LHWP finding that the programme had been, to a large degree, fully funded, with relatively minimal delays in the release of funds.

Since devolution, however, the LHWP across all regions has faced considerable financial challenges, in large part due to the regularisation of LHWs, with Section 5.3.2

⁵⁴ The expenditure in GB of PKR 98 million is misleading in this context. Total releases of funds and subsequent expenditures are highly variable, as is demonstrated in Table 6 in the following section – which shows total releases of funds of PKR 283 million in 2016/17 and 2014/15. This does not change the overall conclusions, but expenditures per beneficiary and per LHW in GB should be treated with caution and are unlikely to reflect the full expenditures required for the full functioning of the programme.

demonstrating that the per LHW cost has more than doubled since the Fourth Evaluation of the LHWP, with an associated and significant decline in funds allocated to non-salary expenditure.

In the transitional years following devolution, a decision of the CCI led to expectations that the LHWP would be funded from the PSDP, up to 2017 in the provinces and with expectations of renewal against new PC-Is in the territories. However, with regularisation there were significant funding gaps in the years that followed, which led to long periods of non-payments of LHWs. This was exacerbated by long delays in the release of PSDP funds experienced in the majority of regions, but particularly in KP, GB, and AJK, where PSDP funds were often released only in the last quarter of the financial year.

There were various responses to the accrual of salary arrears across the regions. Punjab, Sindh, and Balochistan⁵⁵ provided bridge financing (sponsored by provincial Finance Departments). In KP, the salaries component of the LHWP was shifted to the recurrent budget in 2016, and salary arrears of PKR 2,000 million were paid in the 2017–18 financial year. A CCI decision has held the federal government responsible for salary arrears, but has not yet cleared this liability with the provinces.

Table 6 Fund releases by source (PKR millions)

Region	Source	2014–15	2015–16	2016–17	2017–18	Total	Share of release (2014–17)	Share of release (2017–18)
Punjab (IRMNCH and NP)	PSDP	5,665	5,482	8,203	5,742	25,093	56%	50%
	ADP	1,800	1,800	2,528	1,869	7,996	18%	16%
	Recurrent budget	0	0	0	0	0	0%	0%
	Bridge financing	1,444	3,297	3,838	3,838	12,416	25%	34%
	Donor	60	546	0	0	606	2%	0%
	Total releases	8,969	11,125	14,569	11,449	46,112	100%	100%
Sindh	PSDP	2,310	1,540	2,669	0	6,519	52%	0%
	ADP	0	0	0	0	0	0%	0%
	Recurrent budget	0	0	0	6,381	6,381	0%	100%
	Bridge financing	0	3,496	2,430	0	5,926	48%	0%
	Donor	0	0	0	0	0	0%	0%
	Total releases	2,310	5,036	5,099	6,381	18,826	100%	100%
KP (IHP)	PSDP	1,245	1,383	2,242	1,569	6,440	58%	29%
	ADP	125	125	200	169	619	5%	3%
	Recurrent budget	0	0	5	2,034	2,039	0%	38%
	Bridge financing	0	0	0	0	0	0%	0%
	Donor	613	540	1,874	1,603	4,630	36%	30%
	Total releases	1,983	2,048	4,321	5,376	13,728	100%	100%
Balochistan	PSDP	277	157	0	0	434	35%	0%
	ADP	0	0	796	1,116	1,912	65%	100%
	Recurrent budget	0	0	0	0	0	0%	0%
	Bridge financing	0	0	0	0	0	0%	0%
	Donor	0	0	0	0	0	0%	0%
	Total releases	277	157	796	1,116	2,246	100%	100%

⁵⁵ Significant salary arrears had accrued over the period 2012–16. This amounted to PKR 4,213 million in Punjab, PKR 5,194 million in Sindh, and PKR 1,000 million in Balochistan.

Region	Source	2014–15	2015–16	2016–17	2017–18	Total	Share of release (2014–17)	Share of release (2017–18)
	Total releases	277	157	796	1,116	2,346	100%	100%
GB	PSDP	283	57	283	120	742	100%	100%
	ADP	0	0	0	0	0	0%	0%
	Recurrent budget	0	0	0	0	0	0%	0%
	Bridge financing	0	0	0	0	0	0%	0%
	Donor	0	0	0	0	0	0%	0%
	Total releases	283	57	283	120	742	100%	100%
	PSDP	345	656	521	193	1,715	92%	23%
AJK	ADP	0	0	0	0	0	0%	0%
	Recurrent budget	0	0	0	645	645	0%	77%
	Bridge financing	100	39	0	3	143	8%	0%
	Donor	0	0	0	0	0	0%	0%
	Total releases	446	696	521	841	2,503	100%	100%
	PSDP	10,125	9,275	13,917	7,625	40,942	56%	30%
Total	ADP	1,925	1,925	3,523	3,154	10,528	13%	12%
	Recurrent budget	0	0	5	9,060	9,065	0%	36%
	Bridge financing	1,544	6,832	6,268	3,841	18,485	25%	15%
	Donor	673	1,086	1,874	1,603	5,236	6%	6%
	Total releases	14,267	19,118	25,587	25,283	84,256	100%	100%

Table 6 indicates that with the exception of GB, there has been a general decrease in the reliance on funding from PSDP, which across Pakistan accounted for 56% of all fund releases in the period 2014–17 and fell to 30% in the 2017–18 financial year.

Risks to funding and the financial sustainability of the programme vary across the regions. Sindh appears to be well placed, having shifted both salary and operational costs in their entirety to the recurrent budget, offering greater security in funding for the programme with no expectations of receiving further funding through the PSDP. A similar situation is found in Balochistan, where all expenditure has been shifted to the ADP.

In Punjab, funding of the LHWP remained heavily reliant on PSDP funding. However, our Regional Report indicates that the creation of a Schedule for New Expenditure will shift all salary expenditure to the recurrent budget from the 2018–19 financial year.

In KP, salary expenditure was also shifted to the recurrent budget from 2016. However, KP remains heavily dependent on both donor and PSDP funding, placing risks on the financial sustainability of the programme in that province.

The situation is less clear in the territories. In AJK, salary costs have been shifted to the recurrent budget, but remains dependent on the PSDP to fund operational costs, which have decreased significantly over the period 2015–18. GB remains entirely dependent on the PSDP to fund the whole programme. Regional Studies conducted for this Evaluation indicate that there are clear expectations in both AJK and GB that the federal government will continue to fund the programme from the financial year 2019–20 and onwards. However, at the time of writing this report this had not yet been approved.

In summary, in the majority of regions across Pakistan the LHW is appropriately funded in terms of budgeted cost. However, as demonstrated in Section 5.3.2, this funding is heavily skewed towards salary expenditure, which means that despite sufficient funds for planned budgets there remains a significant risk to the ability of the LHW to deliver effectively.

Strength of the evidence – Strong: clear evidence of significant funding gaps in the years following devolution.

5.3.4 To what extent are management systems functioning well in support of effective LHW performance?

Planning

Plan documents and processes for the LHW (in some cases as part of a wider integrated programme) exist for all regions. However, the plans suffer from several weaknesses, including a lack of effective implementation strategies or risk analysis and mitigation, and a lack of firm grounding in evidence.

In general, across all regions the objectives of the LHW and the expectations of the LHW's role and responsibilities are well defined. In almost all cases, with the exception of Balochistan, risks to programme delivery have been identified.

However, this Evaluation finds little evidence that these plans were built on a foundation of evidence and analysis. The process of regularisation was undertaken without a clear assessment of the cost implications for the programme, nor a clearly defined service structure. The expansion of LHW caseload from a maximum of 1,000 residents to 1,500 was undertaken without a careful assessment of the capacity and capabilities of an LHW. The expansion of a LHW's role to include participation in other activities, such a polio programme, was not undertaken with a careful assessment of the implications of taking an LHW out of her community and diversifying her efforts away from her other RMNCH functions.

This Evaluation also finds evidence of limited use of evidence to inform the planning of key systems. Where expansion has taken place in KP, this Evaluation finds that this was undertaken not with an assessment of priority by greatest need for health services, but rather to locations where it was easiest to expand – i.e. proximity to existing communities covered or FLCFs. Procurement of medicines and supplies also lacks a data-driven approach. In all regions, with the exception of Punjab, LHWs are allocated a quota of supplies, rather than being based on an assessment of actual demand and need.

The majority of programme planning documents articulate a set of risks to programme delivery, which include: risks resulting from financing gaps, including the ability to pay salaries on a timely basis or to procure supplies; risks associated with non-adherence to recruitment criteria; and risks associated with the diversion of LHW's effort into other

activities. However, in no case across all regions do they contain a clearly articulated risk mitigation strategy.

Poor planning, as a result, constrains the ability of the programme to efficiently allocate resources, or meet its objectives related to coverage or quality of service delivery.

Strength of the evidence – Strong: this Evaluation found little evidence of clearly articulated plans to support implementation, and no evidence of clearly articulated risk mitigation strategies.

Monitoring and evaluation

The core purpose of the LHWP LHW-MIS is the measurement of results against KPIs defined in PC-Is. Progress has been made in upgrading the LHW-MIS to a web-based system (in KP, Punjab, and Sindh) but in AJK, Balochistan, GB, and ICT the LHW-MIS is still manual. However, effective quality-control mechanisms and the enforcement of reporting on all indicators are lacking across most regions. Consequently, the data produced is of limited reliability. MIS data does not appear to be used systematically (e.g. through regular review meetings) to inform programme strategies in any region.

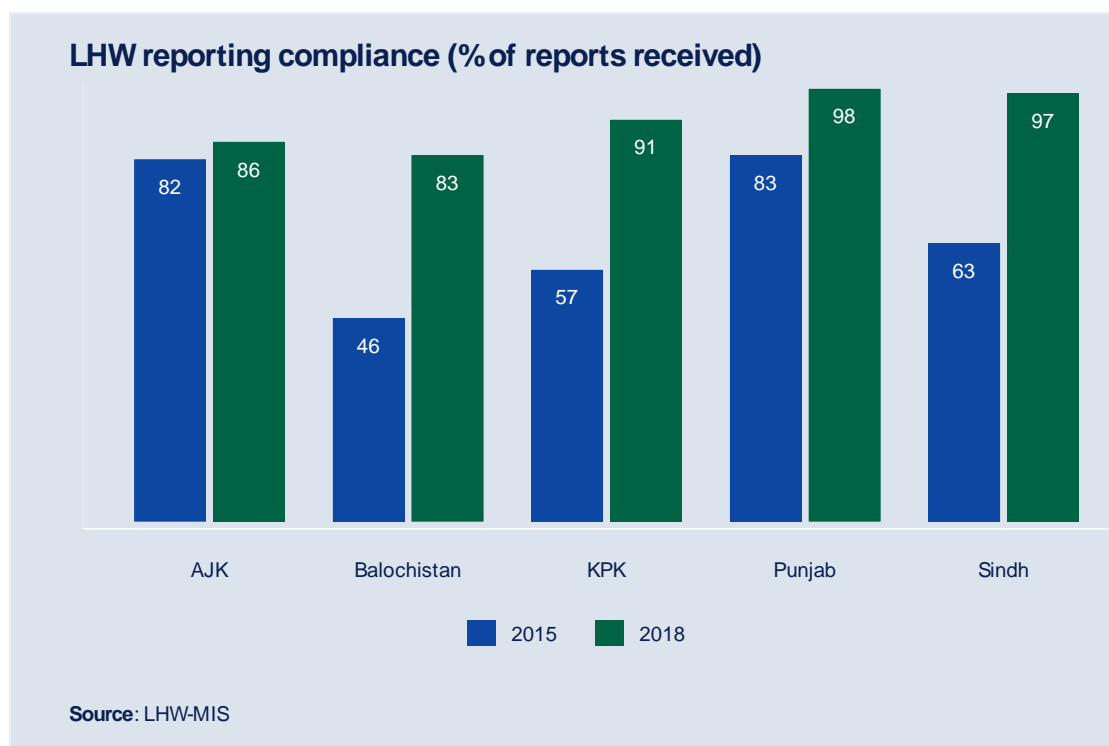
The LHW-MIS system collects a vast amount of data based on nine instruments.⁵⁶ Prior to devolution, the LHW-MIS system was largely a manual-entry, paper-based system, whereby data would be collected by LHWs at the community level and then compiled by LHSs to feed into the district monthly report. This is shared with the DHO at district level, at which stage the data is digitised by a computer operator.⁵⁷

Since devolution there have been some efforts to upgrade the LHW-MIS in three provinces: Punjab, Sindh, and KP. While the mechanics differ slightly, each involve some form of e-monitoring. This extends to the level of the LHS, who are provided with tablets loaded with an Android application, in order to facilitate the digital compilation of reports at that level. Respondents to the Regional Studies indicated in these provinces indicated that this had significantly reduced the reporting delays, as well as contributed to an increase in reporting compliance, which is substantiated by large increases in reporting compliance over the period 2015–18 (see Figure 18).

⁵⁶ Including: an area map, community chart, family register, curative care and FP register, referral slip, LHW diary, mother and child health card, monthly report for LHWs, and a monthly report for the FLCF.

⁵⁷ Mustafa (2018) *The Routine Health Information System in Punjab Province, Pakistan. Exploring the Potential for Integrating Health Information Systems for Family Planning Data*. MEASURE Evaluation & USAID.

Figure 18 LHW reporting compliance (% of reports received)



However, Regional Reports completed for this Evaluation indicate that in Punjab and Sindh there still remained a significant proportion of LHS that are dual reporting, i.e. data is entered into both the Android-based and paper-based systems. This was attributed to the low capacity levels of LHS in their ability to adapt to the new technology, reflective of insufficient training to accompany the new system. Indeed, the District Case Studies suggested that the introduction of new reporting formats across all regions had increased the complexity of reporting, indicating that this had not always been accompanied by appropriate training.

New reporting formats have been introduced and some of the LHWs just don't know how to fulfil them. Even the LHS reporting format is quite complicated and takes considerable time to write. We should have been provided with training on reporting requirements and formats because some of the LHWs have low education and are finding it quite difficult to cope with the reporting. (LHS Barkhan District, Balochistan)

However, the District Case Studies found evidence that it was not necessarily only the low capacity of LHSs that was preventing the uptake of the Android-based system, but also that they were not provided with adequate funds to purchase credit for SIM cards, on which the e-monitoring system relies.

Across all provinces, this Evaluation's Regional Reports find that there is no system for the verification of data at the point at which it is collected. This is a challenge for the LHWP, for a number of reasons. The LHWP does not have an independent and regular means of verifying the accuracy of data that is fed into the LHW-MIS. Approximately 90,000 LHWs feed data into the LHW-MIS; this situation is problematic as this data

includes indicators on which the performance of individual LHWs are measured. In the absence of independent verification of the data, respondents across the provinces indicated that the data quality reviewed in quarterly review meetings was insufficient to adequately assess the accuracy of reported data.

While a full third-party verification of the LHW-MIS lies outside the scope of this Evaluation, a rapid review conducted as part of the Quantitative Study noted a number of issues with the information provided in the LHW-MIS. This ranged from incomplete information – particularly as it related to the stocks of basic supplies required by LHWs – to issues related to the consistency of data, which affects the interpretation of the data presented in the LHW-MIS.⁵⁸

Regional Reports completed for this Evaluation also indicate a general lack of integration with other health MIS, including the District Health Information System. This finding was true even for the two provinces, Punjab and KP, where the LHWP had been integrated with other health or nutrition programmes. This decreases the value of the LHW-MIS as a strategic planning tool, increasing the difficulty experienced by programme managers in accessing the information that they need to inform decision making.

Finally, despite the large amounts of information collected through the LHW-MIS respondents across the provinces indicated that there was a lack of capacity to undertake analysis beyond simple reporting against a small number of KPIs and reporting compliance, which would be supportive of strategic planning. In some instances, there also appeared to be a lack of high-level demand for high-quality management information for the full suite of KPIs that are indicated in provincial PC-Is, with the LHWP not producing Annual Reports across the provinces, as had been the practice before devolution.

Strength of evidence – Strong: a full third-party verification exercise was outside the scope of this Evaluation. However, there appear to be systemic challenges faced in the operationalisation of the LHW-MIS and in the use of the data that are commonly reported across the Regional Studies and supported by evidence from the Quantitative Study.

Supplies and equipment

The lack of a harmonised LMIS for all LHWP supplies, and the lack of capacity to fully implement the LMIS where it is available, severely limits the ability of the LHWP to adequately plan the distribution of supplies. All regions suffered severe disruptions to supplies and equipment in the initial period following devolution of the LHWP relating to shortages of funds for non-salary purposes. In addition, only partial progress has been made in replacing the centralised procurement system in place before devolution. As provinces have taken full budget

⁵⁸ For example, in Sindh the total population figure for the province was not updated in the period 2014–18. This leads to an overestimation of covered population.

responsibility for the LHWP the supply situation has improved, though significant capacity constraints remain through the system.

The logistics system of the LHWP should ensure that there is a timely supply of drugs and non-equipment supplies to the LHW. Failure to ensure this risks the quality of service that she can provide and damages her professional reputation. Prior to devolution, the procurement of supplies was managed centrally through the Ministry of Health using competitive bidding procedures. Post-devolution procurement is run at the provincial level by the Project Implementation Unit, or its equivalent in the integrated programmes in Punjab and KP.

A significant challenge in the timely delivery of supplies to LHWs is the lack of a harmonised LMIS. There are two main LMIS for health in Pakistan, the vaccination LMIS and the contraceptives LMIS that were developed with support from the USAID Deliver Project in the period 2011–16,⁵⁹ of which only the contraceptives LMIS is directly relevant to the work of the LHW and tracks only three out of the 15 medicines or contraceptives included in a LHW's kit bag.

Furthermore, while donor support through the USAID Deliver Project provided technical assistance to the establishment and management of the contraceptives LMIS in KP, Balochistan, and Sindh, respondents to the Regional Studies reported that this had not extended through all levels of management, indicating in particular that this had not sufficiently supported LHSs and FPOs. This is problematic as capacity gaps at this level mean hinder the ability of frontline workers to plan and demand for appropriate levels of supplies.

Regional Studies also note the lack of logistics management capacity across the provinces. Prior to devolution, the LHWP had a detailed logistics manual on which logistics officers had been trained,⁶⁰ the introduction of which had been accompanied by extensive training. However, such training likely only has a shelf life of one year due to high turnover of management and logistics officers, and the LHWP has not continued this practice.

The combination of these factors has meant that the LHWP lacks a formal procurement system that allows for the accurate forecasting of demand and the distribution of supplies. In fact, the majority of provinces still operate on a system of fixed quotas, rather than forecasting demand based on previous consumption patterns and actual demand for supplies. Punjab is the exception in this regard, where the programme has been attempting to forecast demand by asking LHWs to provide a supplies consumption record.

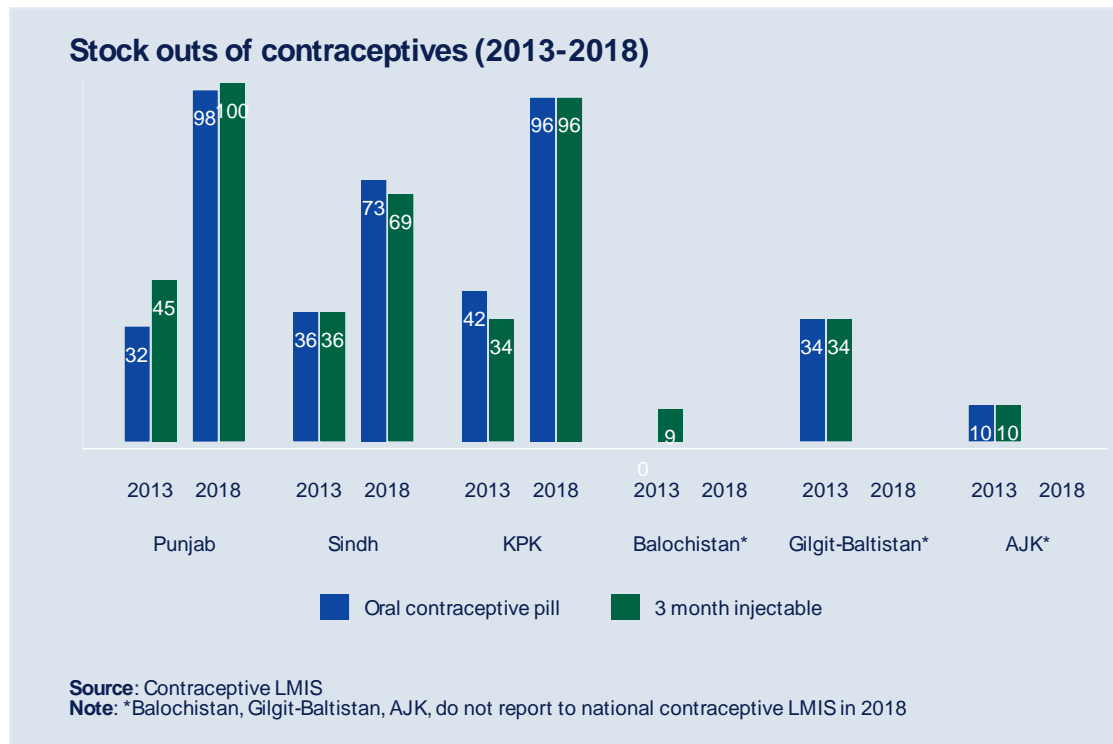
These issues have been compounded by the significant financial challenges faced by the LHWP since devolution; these were worsened by the regularisation of LHWs. With

⁵⁹ USAID (2016) *USAID | DELIVER Project Final Country Report. Pakistan*. USAID | DELIVER Project, Task order 4.

⁶⁰ OPM (2009c).

the majority of LHWP expenditure now focused on the payment of LHW salaries, the funds available for procurement and distribution of LHW supplies has been limited.

Figure 19 Stock-outs of contraceptives reported in contraceptives LMIS



Regional Reports indicate that these issues created severe and protracted stock-outs of all basic LHW supplies in the period since devolution, in all provinces. The lack of a harmonised LMIS for all basic LHW supplies makes it difficult to track the exact episodes of stock-outs across all provinces, but Figure 19 provides a snapshot of the level of stock-outs, comparing the situation for contraceptive oral pills and three-month injectables in November of 2013 and 2018, and is indicative of the worsening situation across Pakistan.

LHWs interviewed as part of the District Case Studies confirmed the issue of protracted stock-outs, indicating across all provinces that the adequate supply of medicines and contraceptives was the major challenge that they faced in delivering on their basic functions. Furthermore, LHWs confirmed that this extended to adequate stocks of equipment in their LHW tool kits, reporting that many LHWs did not have thermometers, weighing scales, or blood pressure apparatus.

In fact, frequent stock-outs of medicines and supplies was confirmed by a ranking of LHW performance conducted with community members. In almost every community, in every district of Pakistan visited by the District Case Studies the lack of supplies was perceived as the category of LHW performance where performance was the worst. Respondents reflected that this had the potential to reverse the gains that the LHWP had been making.

Family planning services by the LHW are very useful for village women because she supplies us condoms and pills in our homes. But many times she says that she has run out of supplies and we will have to buy them from the market. Many women stop using and get pregnant because of the gaps.
(Women's group, Rural Matiari District, Sindh)

Strength of evidence – Strong: while a lack of a harmonised LMIS makes it difficult to accurately track the episodes a duration of stock-outs, respondents to this Evaluation widely acknowledged the challenges faced by the LHWP logistics system and that regular and protracted stock-outs had occurred.

Recruitment and motivation

Recruitment criteria have not been adapted to changes in LHW roles (with the exception of Balochistan). Increased salary costs following regularisation has limited the scope for new recruitment. Regularisation is generally reported to have initially improved LHW motivation, but labour action has increased, particularly following delays in implementing new service arrangements, and in salary payments. It is reported that increased job security has made it more difficult to address problems of poor performance.

In the initial period after regularisation, research undertaken for this Evaluation at province, district, and LHW level indicates that motivation levels for LHWs had increased across all regions of Pakistan. Interviews with LHWs identified that this was derived from an increased sense of job security. However, due to the poorly planned process of regularisation, this initial boost to motivation has been undermined by the lack of an articulated service structure which would allow for a promotion path for LHWs, the fact that LHWs do not enjoy the full benefit package of a government civil servant (including pensions and medical allowance), and considerable delays in the payment of salaries across all regions, with Section 5.3.3 demonstrating the accrual of significant salary arrears particularly for the period 2014–16.

The District Case Studies completed for this Evaluation report a general sense that even following regularisation there was a common feeling that the placement of LHWs and LHSs at the bottom of the government pay scale was not commensurate to the actual workload that was required, particularly as LHWs were now expected to engage in programming outside of their original mandate in many regions of Pakistan following devolution, or were expected to increase their caseload as the programme attempted to manage the freeze on recruitment.

Our pay scale is much lower than the work we do. Each LHS has to visit 10 houses of each LHW every month. I have 18 LHWs reporting to me, as a result I am in the field almost every day and other than that I also have reporting and documentation work, have to report at the office and coordinate for medical supplies and referrals at the facility level. There is a definite need to review the service structure of LHSs and LHWs. (LHS, Mirpur District, AJK)

Some of us have more than one community while our targets remain the same for each community. Either they should reduce our number of houses or they

should hire separate workers for other communities. It becomes very difficult to cover both communities in the same time period. (LHW, Rahim Yar Khan, Punjab)

The programme has gone through some changes especially in respects to referral targets. We have to meet a certain number of targets for delivery cases. We are monitored very closely and given target for deliveries and reporting pregnancies according to which every LHW should have two cases of deliveries and early pregnancies every month. It is hard to achieve this target. (LHS, Mardan District, KP).

Regularisation was reported to have increased the strength of the All Pakistan Lady Health Workers Association, and in response to these conditions LHWs across Pakistan have engaged in significant and regular strike action that has continued since the original decision in favour of regularisation was announced by the Supreme Court, and continued over the period 2012 to 2019.

The regularisation of LHWs has also undermined a key performance management lever for the LHWP. Respondents to the Regional Studies across all regions reported that the process of terminating poorly performing LHWs had become increasingly difficult to manage. While in theory programme planning documents in some regions articulate the process by which poor performance of LHWs is identified and managed and how this can lead to termination, in practice programme managers felt that termination was now impractical with an increasing number of LHWs being able to secure stay orders from the courts to prevent it.

In response, and to enable progress towards coverage targets, the IHP in KP has recruited 3,900 LHWs and 254 LHSs as contract employees; they are paid monthly stipends under similar conditions that applied to all LHWs prior to regularisation. In other regions, there has been no recruitment of LHWs or LHSs since the regularisation of LHWs, meaning that the programme will not meet targets related to the expansion of the programme.

The District Case Studies completed for this Evaluation also indicated that there were shortages of staff at the district level. While a District Coordinator was present in all 11 districts visited for the research, three districts did not have an Assistant District Coordinator or FPO in post, seven districts did not have a data entry officer (to complete LHW-MIS monthly reports in post), and only two districts had an administrative officer in post. This has placed a significant burden on those staff who are in post, who are now having to fulfil multiple roles.

I have been with the LHWP since 1998. Then I was posted to Hunza DHO in 2012 and in 2014 I was given additional charge as DCO. There are no other staff members here so I wear multiple hats from the cleaner to the data entry to administrative matters. Sometimes I hire someone on an ad hoc basis to assist me when the workload is heavy and pay a small amount to that person from my own salary. (Acting DCO, Hunza District, GB)

Strength of the evidence – Strong: clear and unchallenged evidence of freeze on recruitment. District Case Studies provide evidence of the implications for the freeze

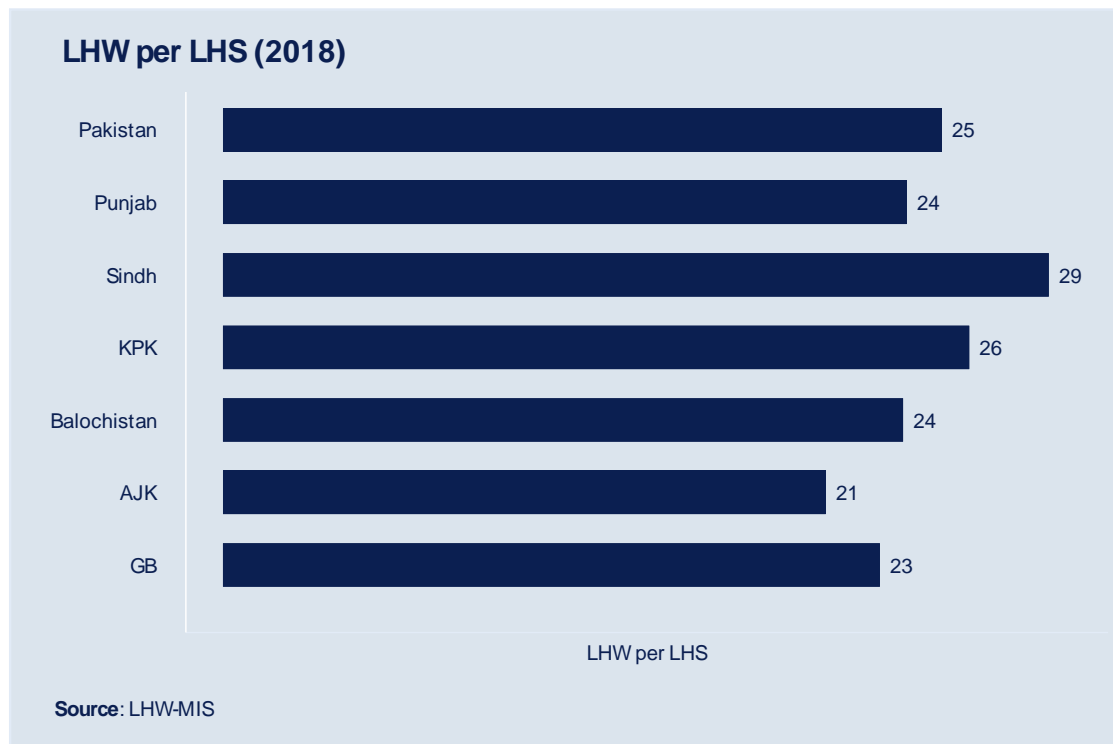
as well as the effect on motivation levels of staff related to salary and service structure.

Supervision

The lack of non-salary resources, in particular related to vehicles and POL costs, has contributed to a weakening in effective supervision except where the programmes are the smallest (ICT).

LHS play a key role in the supervision of the LHWP. As per the LHWP planning documents, it is expected that there should be one LHS per 25 LHWs, and that an LHS should visit each LHW at least twice a month. Figure 20 reports that on average across Pakistan there are sufficient numbers of LHS to cover the current workforce of LHWs. This result holds across the provinces, with the exception of KP and Sindh. Sindh in particular appears to have a shortage of LHSs, with an average LHS-LHW ratio of 1:29, with the Provincial Report indicating that some LHSs are supervising up to 50 LHWs.

Figure 20 LHW per LHS (2018)



Despite, on average, having a sufficient workforce of LHSs, there has been a significant reduction in the capacity of LHSs to perform their supervisory tasks. This relates to significant funding gaps for the maintenance of vehicles and for funding the POL requirements that have been experienced in almost all provinces, with the exception of ICT, which reported fewer problems with coverage owing to a smaller geographic area of coverage. The lack of functioning vehicles is a significant challenge

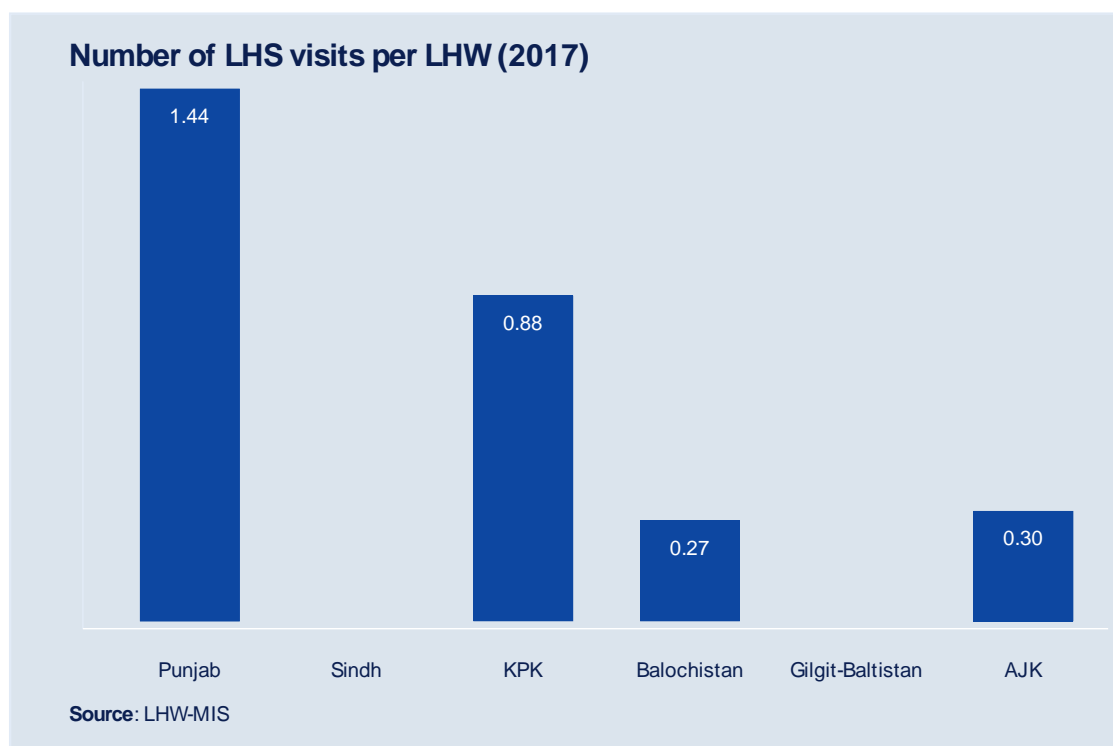
for the LHWP, with the District Case Studies indicated that this was creating significant challenges for LHSs in conducting their work – it meant they often had to rely on their own or public transport.

We have a severe shortage of drivers in our district and we work in hard terrains where it is very difficult to find any public transport or taxies. Most of the time, I drive my own car because there is only one office driver and if we wait for him we get late for work. Today I could not bring my own car because there was no fuel in it and I did not have enough money to buy fuel. (LHS, District Hunza, GB)

Respondents to both the Regional Studies and the District Case Studies indicated that these challenges had significantly reduced the number of visits to LHWs, below the expected two per month. In Punjab, this was exacerbated by an increase in the supervisory responsibility of an LHS who, since the integration of the LHWP into the IRNCH and Nutrition Programme, had taken on additional tasks related to the EPI, TB dots, and nutrition screening programmes.

Quantifying the reduction in supervision consistently across the provinces is difficult owing to a lack of consistent reporting in the LHW-MIS on the number of visits made to LHWs. Figure 21 reports the data available, excluding Sindh and GB. This provides clear evidence that no province is meeting its supervision target, and all are falling dramatically behind target. The outlier is Punjab, where the province has attempted to fund FTAs for the 50% of LHSs who did not have access to vehicles.

Figure 21 Number of LHS visits per LHW



Strength of evidence – Strong: a wide range of stakeholders acknowledge the issue across multiple research activities of this Evaluation.

Capacity building

Training (including routine refresher training) has generally been sporadic and dependent on donor-funded support (especially related to vertical programmes). The Government of Punjab funded refresher training in 2017 and has updated the curriculum and training modules, KP updated its curriculum and conducted refresher training in 2018, while Sindh has updated its curriculum, but in other regions this has not been done.

In Punjab, the refresher training programme was re-vitalised in 2017 under the Chief Ministers Skill Enhancement Programme for LHWs across all 36 districts of Punjab. The programme, designed by BRAC and funded by the Punjab Skills Development Fund, also trained 700 master trainers and included the development of a Work Book for LHWs to streamline the refresher training process. The programme team in Punjab expressed their plans to conduct refresher training every two years, supported by additional training targeted at specific programme components.

In KP, the process of updating the curriculum began in 2014, but was only completed in 2018. This was followed by the launch of refresher trainings for all programme staff, the first time that this had occurred since devolution.

In all other provinces, financial constraints have meant that capacity building sponsored by the LHWP itself has halted, placing a core component of the programme, the skills of its frontline workers, at risk despite annual refresher training being provided for in programme documents. This includes the provision of the refresher training itself, as well as any attempts to update the LHW curriculum to respond to additional tasks.

In Sindh, Balochistan, KP, Balochistan, GB, and AJK, donors, including UNICEF, had stepped into the gap and provided training sessions. However, respondents to the Regional Studies indicated that these, while greatly appreciated, did not cover the full LHW curriculum and tended rather to focus on the needs of specific donor-funded projects. Given that these training sessions were focused on the needs of specific projects, they also tended to be sporadic in nature, and not a direct substitute for the refresher training articulated in programme documents.

This finding was confirmed by LHWs interviewed during the District Case Studies, who in all regions, with the exception of Punjab and KP, confirmed that training sessions had become increasingly sporadic, and that when they did occur, they tended to focus on the needs of specific campaigns.

The last training we had was 10 years back, a MNCH refresher. Since then there have been no trainings except orientation sessions for polio, dengue, and TB-dots. (LHW, Islamabad District, ICT)

Strength of evidence – Strong: the halting of capacity building efforts is acknowledged by all stakeholders.

Financial management

Delays in the release of PSDP funds, as well as increased costs following regularisation, contributed to significant problems of financial management, especially over the period 2012–17, including the accrual of salary arrears. Subsequently, there have been improvements in the flow of funds as regions have taken more direct financing responsibility for the programme and accrued arrears have been cleared.

Table 7 presents the utilisation rates in terms of total expenditures out of total released funds. This demonstrates an increased performance in the flow of funds across the majority of regions following the difficult transitional period directly after devolution, as the provinces have gradually taken over responsibility for funding the LHWP.

Table 7 Utilisation rates of total released funds

	2014–15	2015–16	2016–17	2017–18
Punjab	33%	86%	87%	92%
Sindh	100%	100%	100%	100%
KP	72%	117%	87%	102%
Balochistan	42%	11%	91%	83%
GB	100%	100%	100%	82%
AJK	88%	100%	99%	77%
Total	53%	93%	90%	95%

In the territories, however, the utilisation rates remain below optimal levels. During interviews conducted during the Regional Studies, this was attributed to significant delays in the release of PSDP funds, which despite expectations of quarterly release sometimes take place only in the last quarter of the financial year. In fact, in GB, where the LHWP is solely reliant on PSDP funding, the utilisation rate out of total funds was only 26% a result of the late release of PSDP funds. In AJK, in the 2017–18 financial year there was not even the opportunity to use PSDP funds, with the release of PKR 193 million arriving on 30 June 2018, the last day of the financial year. Furthermore, no PSDP funds have been released in the 2018–19 financial year. Balochistan also experienced significant delays in the release of PSDP funds, which goes some way to explaining the extremely low utilisation rates experienced in the financial years 2014–15 and 2015–16. As of the 2016–17 financial year, the LHWP in Balochistan has been shifted to the province's ADP, with a resultant improvement in utilisation rates.

Strength of the evidence – Moderate: while the Evaluation finds evidence of improving flow of funds overall, the Evaluation was not provided with utilisation rates for every source of funding separately.

5.3.5 How has LHWP implementation affected the mechanisms determining LHW performance?

Three mechanisms determine the ability of an LHW to effectively deliver a high quality of care to the communities in which she works. First, they must possess practical, relevant, and accurate knowledge to perform their roles. Second, to foster a high level of client engagement, LHWs must feel free to operate within the communities in which they serve, and be accepted, trusted by, and accountable to them. Third, LHWs must be motivated through adequate support, incentives, and governance and accountability frameworks. To a large degree, the current implementation of the LHWP systems is not supportive of the functioning of these mechanisms.

The ToC produced for this Evaluation highlights three key mechanisms by which LHWs can be effective in bringing about behaviour change in their clients and the communities that they work with, and in achieving results. These are: knowledge, client engagement, and motivation.

- **Knowledge:** LHWs possess practical, relevant and accurate knowledge that they are able to use to perform their roles.
- **Client engagement:** LHWs feel free to operate within the communities that they serve, and are accepted, trusted by, and accountable to them.
- **Motivation:** LHWs feel supported, incentivised, accountable, and responsible for their work.

Inputs provided by the LHWP affect the extent to which these mechanisms will be effective, including management, supervision, and training support, and the provision of resources to LHWs. In what follows, we discuss the implications of our findings presented on the functioning of various management systems for the functioning of these mechanisms.

Knowledge

We define knowledge as ‘LHW’s possess practical, relevant and accurate knowledge that they are able to use to perform their roles’. A literature review conducted during the Inception Phase of this Evaluation to inform the development of the ToC used here reported that knowledge deficit has been widely regarded as the leading cause of poor performance of community health workers. Global systematic reviews of interventions aimed at improving workers’ performance highlight the centrality of appropriate and regular training to any gains in community health worker performance.

The evidence provided above indicates that there are significant risks of a knowledge deficit for LHWs. The LHWP itself, with the exception of Punjab, has conducted no refresher trainings for LHWs since regularisation as the increased salary burden has squeezed operational costs. Although in other regions a range of donors have provided training sessions, these are reported to have not covered the full curriculum of an

LHW, rather tending to focus on the specific needs of the donor project. This is problematic as evidence presented in this Evaluation's literature review indicated that retained knowledge fell over time following the initial training session.

Even if all regions were able to restart their refresher training regimes, there is a question of whether that training would be relevant to current needs. The LHW curriculum has been updated in Punjab, Sindh, and KP. This is a necessary measure as the mandate of an LHW has expanded since devolution, and in particular there is an increased engagement with other programming (such as polio campaigns). Given that other regions have not updated their LHW curriculum, there is a risk that it will not cover the full set of roles and responsibilities that an LHW is now expected to deliver.

Finally, training should provide accurate information. The LHW curricula in half the regions of Pakistan have not been updated for more than a decade. As such, they will not reflect current best practice in the delivery of community-based family planning and RMNCH interventions through community health workers such as the LHW, undermining the quality of care that an LHW can provide.

Client engagement

Client engagement was defined as 'LHWs feel free to operate within the communities that they serve, and are accepted, trusted by, and accountable to them'. The literature review conducted for this Evaluation indicated that the recruitment policy of any community health worker programme is crucial to making sure that community health workers are better fit to meet the needs of the local context, as well as to improving their accountability to the programme.

In this regard, the LHWP is for the most part functioning well. The recruitment criteria of the programme require that LHWs be recruited from the communities in which they live. This means that they are known, and so are more likely to be trusted, by the communities in which they work. However, evidence provided in Section 5.2.2 indicates that LHWs are being asked to engage in programming that takes them outside of their communities. This undermines the functioning of the client engagement mechanism, with evidence from the District Case Studies strongly suggesting that LHWs can struggle to be accepted by communities where they are not known.

The literature review conducted for the Evaluation also indicates that integration with the wider health system is crucial for the effective delivery of a community health worker programme. The coordination with other health professionals in the health system improves the credibility of community health workers, thereby improving their ability to engage with their community.

Evidence provided in Section 5.2.4 indicates that in all regions of Pakistan, with the exception of AJK, there are challenges with inter-departmental coordination. This has led to reports of uncooperative behaviour from the staff of FLCFs managed by the PPHI, with indications that the patients of LHWs are not provided with the same level of care as is afforded to other patients. This lack of integration undermines the trust

placed in LHWs by their community, and undermines the functioning of this mechanism.

Motivation

Motivation has been defined as ‘LHWs feel supported, incentivised, accountable, and responsible for their work’. Community health worker’s motivation is best understood as a complex and dynamic process such that the degree of alignment of individual goals with wide organisational goals determines motivation. There are multiple channels which influence community health workers motivation, going beyond financial incentives. In what follows, we discuss these channels in turn.

Financial incentives

The literature review conducted for this Evaluation identified a wide body of global evidence that strongly suggests the positive motivational influence of financial incentives. This was linked not only to the level of monetary incentives, but crucially to two factors – that payments were received regularly, but also that the level of monetary incentives was perceived to be commensurate with the workload expected of a community health worker.

In this regard, regularisation (as discussed above) seemed initially to support the motivation mechanism, in that it represented a significant increase in the pay for LHWs. However, the unplanned nature of the regularisation, and in particular the substantial resulting funding gaps, which led to long periods of the non-payment of LHW salaries, has reversed the initial gains made in this mechanism. Furthermore, we present evidence in Section 5.3.4 that there is a perception among many LHSs and LHWs that the level of monetary incentives provided to them through the basic pay scale is not appropriate for the level of effort that is being asked of them.

Resources

A regular and adequate supply of drugs and equipment is integral for community health workers to perform their duties, as well as to ensure the community’s uptake of health services. A disruption to the supplies of medicines and equipment not only has an immediate deteriorating impact on a community health worker’s ability to perform their services, but has other detrimental consequences on their reputation and the respect accorded to them within the community they serve.

In this regard, the current performance of the LHWP systems are not supportive of this mechanism. Financial constraints following regularisation, and the lack of systems to accurately plan the procurement and disbursement of supplies has led to significant stock-outs of the medicines and equipment that are expected to be contained in a LHW’s kit bag. This has been identified by community members as the worst performing aspect of the LHWP, threatening the credibility of LHWs in the eyes of their community, and as a result the motivation of LHWs.

Supervision and support

The literature review conducted for this Evaluation indicates that supportive supervision which provides feedback on technical and interpersonal skills in a non-threatening manner can greatly contribute to the motivation and performance of community health workers.

In this regard, the current performance of the LHWP systems are not supportive of this mechanism. While we find evidence on average of a sufficient number of LHSs, funding gaps following regularisation has led to a marked decline in the regularity of supervision visits due to a significant shortage of functioning vehicles available to the LHWP. Beyond this, we find evidence that updates to the monitoring system, and in particular reporting formats for LHSs and LHWs, have not been accompanied by adequate training. This means that rather than facilitating supportive feedback, the current supervision mechanisms appear to be adding to the burden of LHWs.

Workload

A manageable workload improves the chances of a community health worker's acceptance by the community that she serves. A workload can be understood as the interplay between the number of tasks, the organisation of tasks, and her catchment area. The literature review conducted for this Evaluation indicates that while there is no consensus on the ideal number of tasks and size of catchment area, a higher number of tasks or a larger catchment area negatively affects a community health worker's performance and the quality of the services delivered.

In this Evaluation, we provide some evidence that the current performance of the LHWP systems are not supportive of this mechanism. In Section 5.3.4, we find no evidence that the decision to expand the maximum caseload from 1,000 to 1,500 residents was accompanied by an assessment of the capacity and capabilities of an LHW to meet this challenge. Furthermore, we find no evidence that there was an assessment of the capacity of an LHW to engage in other programming, such as polio campaigns, and the effect that this would have on the performance of her core duties. LHWs interviewed during District Case Studies report that both have limited their ability to perform their core duties.

Strength of the evidence – Strong: clear evidence across multiple sources that determine how the current implementation of the LHWP is affecting the mechanisms through which LHWs can have an impact in the communities that they work.

5.3.6 What mechanisms are in place to facilitate learning, and how has the LHWP made use of this learning to adapt programming?

No evidence was found in any region, with the exception of Punjab, of any attempts to systematically use MIS data, or to evaluate, to support or use

research on the LHWP to learn lessons to improve performance. There was also no sharing of evidence across the provinces.

The exception to this finding was in Punjab, where the provincial government had commissioned an external evaluation with the objective of providing action-oriented information to improve the performance of the programme in the province, though the results of this exercise are not yet in the public domain.

In other provinces, stakeholders could not provide evidence of learning mechanisms, and it appeared that in the majority of regions the practice of internal review meetings had become increasingly regular. Furthermore, given that the practice of holding quarterly review meetings between the provinces and the federal level had been suspended, there was currently no mechanism for the sharing of experiences across provinces.

Strength of evidence – Strong: with the exception of Punjab, no government stakeholders were able to provide evidence of any functioning learning mechanism.

5.3.7 Is there a process for managing risk, and to what extent has this been successful in identifying and mitigating risk?

In some regions, the programme planning document (PC-I) does provide some analysis of risk. However, none of the regions has or has been implementing a risk mitigation strategy.

Programme planning documents in Sindh and Balochistan contain an analysis of risk, and therefore no identified process for identifying nor mitigating risk.

Programme planning documents in KP, GB, and AJK contain a similar set of identified risks. These relate to risk related to gaps in funding which was identified as likely to lead to reduced ability to finance supplies, train LHWs, and put at risk the ability of the programme to pay for salaries. Despite identifying these risks, the programme planning documents in none of the three regions contained any risk mitigation strategy to mitigate these risks.

In Punjab, a Fiduciary Risk Assessment had been conducted in 2015 which identified key risks pertaining to: weaknesses in annual budget submissions for the ADP and PSDP; lengthy delays in the preparation of IRMNCH and NP cash plans; and lengthy delays in the process of securing fund releases and moving resources to the point of expenditure. Despite the identification of these risks, the programme in Punjab has not developed a risk mitigation strategy to address the identified risks.

Strength of the evidence – Strong: government stakeholders could provide no evidence of an implemented risk mitigation strategy, and only limited processes for identifying risks.

5.4 Impact

5.4.1 To what extent has the programme contributed to the long-term health outcomes of the LHWP, especially of women and children?

Despite the clear challenges faced by the LHWP, we find that the LHWP continues to have an impact on the long-term health outcomes of the population it reaches. Three domains of healthcare are explored: family planning; maternal care; and infant and young child care. We find the strongest impacts in family planning and maternal care. We find little impact on infant and young child care (including immunisation rates), although a positive impact on polio is an exception reflecting a diversion of resources to this area. Although we find that the LHWP misses many marginalised communities, the impact of the LHWP is strongest for poorer households that it does reach. In comparison to the Fourth Evaluation of the LHWP, the overall level of impact has declined, with the programme no longer having an impact on the proportion of children aged 12–23 months who are fully vaccinated.

In order to identify the impact of the LHWP on long-term health outcomes, we exploit three rounds of the Pakistan DHS (conducted in 2006/07, 2012/13, and 2017/18). The use of observational data to estimate causal effects is challenging. The first challenge is in identifying those that have been served by the programme. We exploit a variable contained in all rounds of the DHS that indicates whether or not an interviewed woman has been visited by an LHW in the 12 months prior to the survey.

We use this to measure impact at two levels: (1) at the individual level, so that a treatment group is defined as all women who have been visited by a LHW in the previous 12 months; and (2) at the community level, where we use this variable to create a proxy for whether or not the community has been served by the programme.⁶¹ These are discussed in the accompanying Quantitative Survey Report.

The second challenge is the identification of an appropriate counterfactual that has not been served by the LHWP; we can use this as a point of comparison to the defined treatment group. A key factor that must be overcome is systematic differences that exist between the treatment group and any counterfactual.

Without controlling for these differences, we will not know if observed differences in health outcomes between treatment and counterfactual are attributable to the LHWP, or because of systematic differences in other characteristics, such as the education attainment of women. We solve this by employing a quasi-experimental methodology known as CEM. This uses statistical techniques to match treatment and counterfactual groups on a wide range of observable characteristics to ensure that they are

⁶¹ We cross-reference this variable in two ways: (1) against a community-level question that asked if there was an LHW working in the community only available in the DHS 2012/13 round; and (2) against coverage rates presented in the LHW-MIS. We find a high degree of correlation between the results, suggesting that the community-level indicator is an appropriate proxy.

appropriately balanced. **Error! Reference source not found.** presents this approach in detail, as well as our findings that this represents a robust way of assessing the impact of the LHWP.

Impact on family planning

Table 8 presents a positive picture of the impact of the LHWP on family planning. Currently married women aged 15–49 years exposed to the LHWP on average know more modern methods of contraception, and are more likely to have ever used contraception, currently be using any form of contraception (i.e. CPR), or to be using any modern method of contraception relative to a comparable group of women not exposed to the LHWP.

Results are particularly strong for the indicators *number of modern methods known* and *proportion of women who are using modern contraceptive methods*, where we find a positive impact at both the individual and community levels of estimation. This suggests that against these areas the LHW has an impact on women that she visits, but that this outreach is strong enough to also generate an impact at the community level. In terms of the number of modern methods known, we find that the LHWP increases the average number of methods known by 0.45 and 0.37 at individual and community levels, respectively. Additionally, we find that the probability of using any modern method of contraception is increased with exposure to the LHWP by 5% and 3% at the individual and community level of estimation, respectively. These findings are strongly consistent with the 4th Round of LHW Evaluation, which also found positive impact of the LHWP on family planning.⁶²

That there is still an impact on the CPR and the proportion of women using any modern method in the DHS 2017/18 round of survey is encouraging given the severe stock-out issues reported earlier in this report. In part, this is likely to reflect a change in attitudes. Community respondents to the District Case Studies reflected that LHWs were closely associated with family planning counselling, with a general perception among respondents that before the LHWP people had been hesitant about contraception and feared talking about it openly, and that LHWs had help to change these attitudes.

Earlier on people would be hesitant while talking about family planning but now due to the LHW people talk about it openly. (Men's FGD, Urban Islamabad District, ICT)

However, we also see that the strength of the impact on the CPR and the proportion of women using any modern method declined between the DHS 2012/13 and DHS 2017/18 survey rounds. This is likely to reflect the regular and protracted stock-outs of contraceptives reported earlier in this report. Indeed, community respondents to the District Case Studies reflected that while they understood that the supply of contraceptives was a core function of an LHW, she regularly did not have supplies and that people would have to purchase them instead out-of-pocket from a local market.

⁶² OPM (2009).

Table 8 Impact on family planning

	Individual-level estimation			Community-level estimation		
	DHS 2006/07	DHS 2012/13	DHS 2017/18	DHS 2006/07	DHS 2012/13	DHS 2017/18
Number of modern methods known	0.23***	0.38***	0.45***	0.01	0.20**	0.37***
Proportion who have ever used any method of contraception	0.07***	0.04**	0.06***	0.04**	0.00	0.01
Proportion who are currently using any method (i.e. CPR)	0.07***	0.08***	0.05***	0.02	0.02	0.01
Proportion who are currently using any modern method	0.06***	0.07***	0.05***	0.03*	0.03**	0.03*
Note: calculations made using several rounds of the DHS. We present marginal coefficients for binary outcomes. Standard errors are clustered at the level of the enumeration area. Statistical significance is denoted using the following notation: * 10%, ** 5%, *** 1%.						

Despite this, the finding against the CPR is weaker: we find only impact of the LHWP at the individual level and not the community level of estimation. This weaker evidence for the CPR suggests the potential that these results are achieved by convincing family planning clients who already used contraceptive methods to switch to modern methods. That is, there is the potential for the existence of a substitution effect besides the expansion of the CPR base (which includes traditional methods).

Impact on maternal care

Antenatal care is one of the areas of focus of the LHWP, and at least in the domains specifically under the control of the LHWP we find some strong impacts. Our results presented in Table 9 show consistent positive results for the impact of the LHWP against two key dimensions of ANC, in particular the proportion of women who gave birth in the five years prior to the relevant DHS survey round who have had at least two TT injections and who have bought or given iron tablets to take during pregnancy.

In fact, when we consider the individual-level estimation, we see that exposure to the LHWP has increased the probability of women having had two TT injections by between 8% and 11%, with this impact increasing over time. At the community-level estimation, we observe similarly strong estimates of impact in more recent rounds of

the DHS. This finding is strongly consistent with the Fourth Round of LHW Evaluation,⁶³ which found an impact of similar magnitude.

In terms of the likelihood of taking iron tablets during pregnancy, we observe a strong positive impact of the LHPW at both the individual and community estimation levels, which indicate that the programme has increased the probability that women took iron tablets during pregnancy by 6% and 11%, respectively, when analysed on the most recent round of DHS.

Table 9 Impact on health practices in maternal healthcare

	Individual-level estimation			Community-level estimation		
	DHS 2006/07	DHS 2012/13	DHS 2017/18	DHS 2006/07	DHS 2012/13	DHS 2017/18
Proportion who had at least one antenatal consultation	0.03	0.05***	0.04***	0.04	0.01	0.02
Proportion who had at least four antenatal consultations	0.00	-0.01	0.04	-0.01	-0.03	0.02
Number of antenatal consultations	-0.05	-0.07	0.16	-0.10	-0.02	-0.16
Proportion who had at least two TT injections in last pregnancy	0.08***	0.10***	0.11***	0.02	0.07**	0.11*
Proportion who bought or were given iron tablets in the last pregnancy	0.08***	0.06**	0.06***	0.07**	0.06*	0.11***
Proportion of births attended by a doctor, nurse, or LHV	0.02	0.02	0.02	0.00	0.00	0.00
Proportion of births delivered at a health facility	0.00	0.03	0.02	0.00	0.00	0.02
Proportion of newborns examined within 24 hours	0.00	0.06**	0.05*	-0.01	0.05	0.05
Note: calculations are made using several rounds of the DHS. We present marginal coefficients for binary outcomes. Standard errors are clustered at the level of the enumeration area. Statistical significance is denoted using the following notation: * 10%, ** 5%, *** 1%.						

⁶³ OPM (2009).

The picture is more mixed with regards to antenatal consultations. We find that at the individual level, i.e. if a woman has actually been visited by an LHW in the 12 months prior to the relevant DHS round, there is a positive impact on the proportion of pregnant women who had at least one consultation. However, this result is not replicated at the community level. This suggests that while there is impact on ANC for those women that the LHW reaches, the LHW does not reach a sufficient number of women in her catchment area for us to observe impact at this level.

Furthermore, we do not find that the LHWP has had an impact on the proportion of women who have received at least four ANC visits. This is important as this is the minimum acceptable number of ANC visits expected for pregnant women. This finding is strongly consistent with the 4th Round of LHW Evaluation,⁶⁴ which did not find an impact on the proportion of pregnant women receiving at least four ANC visits.

However, we do find that the LHWP has a positive effect on the probability that a newborn's health is checked within 24 hours, albeit for only the latter two rounds of DHS at the individual level and not the community level of estimation. In fact, we find that the probability of checking a newborn's health is increased by exposure to the LHWP by 6% in 2012/13 and 5% in 2017/18 for the individual level of estimation.

Finally, although the LHWP aims at improving the quality of birth attendance as it is reflected by targets set at provincial levels, when we look at both the individual- and community-level estimation, we do not find any significant effect on either trained birth attendance or institutional deliveries.

Impact on infant and young child health

Table 10 presents the impact estimates for a set of indicators in the domain of health practices in infant and child health. The impact analysis presented here suggest that this should be an area of concern for the LHWP.

The first domain relates to the immunisation of children aged 12–23 months. In this round of evaluation, we find very weak evidence to support the claim that the LHWP has a positive impact on this indicator. In fact, we find that the LHWP increases the proportion of children aged 12–23 months who are fully vaccinated only at the individual level of estimation and only for the DHS 2012/13 survey round. This is at odds with the Fourth Round of Evaluation of the LHW,⁶⁵ which found a strong positive effect of the programme on immunisation.

Despite this finding, and given the importance of polio programming and the increasing role that LHWs play in the delivery of polio vaccination campaigns, we also investigate the impact of the programme on the proportion of 12–23-month-old children who have been immunised for polio. In this case, we find that exposure to the LHWP increases the probability of a child being immunised for polio at the individual level of estimation

⁶⁴ OPM (2009).

⁶⁵ OPM (2009).

in the DHS 2012/13 round (5%) and in the DHS 2017/18 round (6%). This finding potentially reflects a diversion of resources to this category of immunisation.

Indeed, respondents to the District Case Studies were asked to rank the services provided by an LHW; the supply of polio drops was ranked as the best practice of an LHW, particularly by rural communities. Communities in rural areas reflected that this was because the LHW had brought the vaccinator to their doorstep.

Table 10 Impact on infant and young child health

	Individual-level estimation			Community-level estimation		
	DHS 2006/07	DHS 2012/13	DHS 2017/18	DHS 2006/07	DHS 2012/13	DHS 2017/18
Proportion of children aged 12–23 months fully immunised	0.02	0.09**	0.05	0.05	0.07	0.07
Proportion of children aged 12–23 months immunised for polio	0.01	0.05*	0.06**	0.02	0.06	0.06
Proportion of children born in last two years for whom breastfeeding was initiated early	0.02	0.00	0.01	0.02	0.00	0.02
Proportion of children under six months who are exclusively breastfed	0.01	0.00	0.01	0.00	0.00	0.00
Note: calculations made using several rounds of the DHS. We present marginal coefficients for binary outcomes. Standard errors are clustered at the level of the enumeration area. Statistical significance is denoted using the following notation: * 10%, ** 5%, *** 1%.						

Finally, breastfeeding practices should remain an area of concern for the LHWP; as is consistent with the 4th Round of Evaluation of the LHW, we do not find any positive or significant results of the LHWP on either the early initiation of breastfeeding or exclusive breastfeeding at either the individual or community level of estimation.

LHWP impact by wealth quintile

In this sub-section, we examine whether the LHWP has differential impacts against the three domains relevant to the work of LHWs depending on their socio-economic status. The LHWP, other than in its selection of served areas, is not explicitly targeted at the poorest of households, with an LHW providing universal care in her given catchment area. Thus it is important to understand whether there are heterogeneous impacts of the LHWP, particularly given our finding in Section 5.1.1 that the LHWP does not appear to be a pro-poor programme on average over Pakistan.

As a result, it is important to understand whether relatively poorer households do indeed receive different benefits from the LHWs, compared to better off households. In order to perform this heterogeneity analysis, we exploit the DHS wealth index⁶⁶ and compare two groups of households: the poorest households, defined as households who are in the poorest two quintiles of the DHS wealth index; and the richest households, defined as those who are in the richest two quintiles of the DHS wealth index.

We then apply the same CEM approach described above to estimate the impact of the LHWP on these groups of households.

Results of impact by wealth quintile

The full results of the heterogeneity analysis by wealth quintile are presented in tables reported in the accompanying report of the Quantitative Study, which presents the results of this analysis for the DHS 2017/18 round of survey and for the individual level of estimation for ease of presentation and interpretation.

Overall, the results presented there confirm the same pattern of results we see for each of the three domains reported above, with strong results against family planning and some aspects of antenatal care and weaker results against infant and child health.

However, we do observe some interesting differences between the two groups in the domains of family planning and maternal care. In fact, we observe that the impact of the programme on the majority of family planning indicators, including number of methods owned and the CPR, are stronger for the poorest two quintiles, as compared to the richest two quintiles. Indeed, we find that the impact on the number of methods known for the poorest quintiles is an increase of 0.68, compared to just 0.33 for the richest quintiles, while exposure to the LHWP increases the probability of a woman being currently using any form of contraception (CPR) by 6% for the poorest quintiles, compared to 5% for the richest quintiles.

The same pattern is observed even more strongly for indicators related to the maternal healthcare domain, where we observe that the programme has a greater impact on the poorest two quintiles, as compared to the richest two quintiles. While for the poorest quintile we observe impact in each of the domains in the overall analysis, we only observe impact for the richest quintile on the proportion of women who have had at least two TT injections, and even in this case the impact on the poorest quintiles is double that, increasing the probability of having had two TT injections by 12%, compared to just 6% for the richest quintiles.

Furthermore, we find that there is actually an impact of the LHWP on the poorest quintile for the proportion of women who received at least four ANC visits, with the

⁶⁶ The DHS wealth index approximates the wealth of a household by creating an index based on the ownership of assets and other household characteristics.

results indicating that exposure to the LHWP had increased the probability of receiving four ANC visits by 7%.

The only area in which the richest quintiles observe better impact from the LHWP is in the proportion of newborns examined within 24 hours, where exposure to the LHWP increases the probability of newborn examination by 7% for the richest quintile (we could not find a statistically significant impact for the poorest quintile).

These results provide some interesting insights. With regards to the differential impact on TT injections, use of iron tablets, and antenatal consultations, a possible interpretation of this finding is that supply-side barriers remain significant for poorer households, which hampers their access to these maternal healthcare practices, with the results suggesting that the LHWP is playing a role in relieving. The richest households do not face such supply-side constraints, and so demand-side constraints (and in particular cultural attitudes) come into play for relatively better off women. Indeed, it can be reasonably assumed that it is easier for an LHW to address the supply-side constraints rather than systemic demand-side constraints, such as cultural attitudes.

Finally, while we observe earlier in this report that on average the LHWP did not appear to be a pro-poor programme, in large part because of the selection of served areas, this analysis suggests that within the catchment area of LHW, the LHW is more likely to specifically target poorer households, and thus we observe greater impact of the programme on them.

Strength of the evidence – Strong: the findings draw on evidence from a well-balanced treatment and counterfactual using an appropriate methodology. Findings from the DHS 2006/07 and DHS 2012/13 round are consistent with the 4th LHW Evaluation.

5.4.2 To what extent has the programme contributed to the empowerment of LHWs and LHSs?

The LHWP has greatly contributed to the empowerment of LHWs and LHSs through four main channels: greater social status and recognition within their communities; greater job security following regularisation; and greater knowledge through training sessions where they have occurred. However, there are threats to this progress, emanating from shortfalls in the implementation of the LHWP.

Empowerment ranking exercises were conducted as part of the District Case Studies completed for this Evaluation. These identified two key drivers of the empowerment of LHWs and LHSs, as well as identifying the potential threats to these drivers. These are discussed in turn below.

Community recognition and social status within the community

LHWs and LHSs consistently reported across all districts that the main driver of their empowerment had been their sense that they had made a real contribution to improving health outcomes in the communities that they served. In general, it was reflected that the community response to their work was positive and that they enjoyed an elevated status within the community as a result.

People listen to us and acknowledge our work. We have been able to improve CPR, reduce infant and maternal deaths and create a general awareness amongst people who were not even willing to listen to us in the beginning.
(LHW, Barkhan District, Balochistan)

This was confirmed by responses from LHWP beneficiaries across the majority of districts, who felt that in general that the LHW had a very positive effect on the improvement of health outcomes, particularly for women and children.

If we compare the health status of people 20 years back and now there is a big difference and we feel the LHWs have a great contribution in this regard. (Men's FGD, Urban Hunza, GB)

However, there are a number of implementation challenges that have the potential to threaten to undermine the credibility of LHWs within the communities in which they work. LHWs reported that it was their social status within the community that was driving empowerment gains and that their inability to perform to community expectations because of implementation challenges directly risked their reputation and as a result their standing within the community. As discussed earlier, the LHWP has experienced severe and protracted stock-outs of basic LHW supplies. Overall, the insufficient supply of medicine and contraceptives was described by LHWs as the main challenge faced in the delivery of their work, causing embarrassment when they had nothing with which to meet the needs of beneficiaries.

This month LHWs were only given paracetamol tablets because there was nothing else in stock. (LHS, District Islamabad, ICT)

Central to the role of the LHW is the referral of patients to government health facilities, often accompanying patients. As a result of this, both the LHS and the LHW place strong emphasis on the quality and availability of services in the facilities to which they refer patients, reflecting that their reputation and standing within the community was directly linked to the quality of service that a beneficiary received.

However, in the majority of districts visited, LHSs and LHWs reported that health facilities were often understaffed at all levels, including doctor, technician, and nurse. This directly risks the reputation of the LHW within her community, particularly for remote communities, such as Bharkhan in Balochistan, where travel to health facilities is costly. Low levels of staffing were further compounded by the finding that FLCFs in LHW catchment areas often lacked required diagnostic tools and facilities. The combination of both factors has affected the reputation of LHWs in their communities

and led some community members to refuse referrals, leading to a sense of disempowerment among LHWs as their reputations suffered.

Staff absenteeism is common in the facilities which is quite irksome for the patients as well as well as embarrassing for us. Many times patients get upset with us for referring them to a facility and not finding the appropriate service provider. Reaching the facilities is not easy especially for someone who is unwell. The cost for travel also goes to waste and for poor people such issues have consequences. (LHW, Barkhan District, Balochistan)

Because of a lack of facilities at health centres, people don't listen to us and refuse to accept our referrals. This is not only embarrassing for us but also affects our performance indicators. (LHW, Rahim Yar Khan District, Punjab)

Greater job security

Following regularisation of LHSs and LHWs, respondents to the District Case Studies indicated almost unanimously that this had given them a much greater sense of job security. There was a general sense that the increased pay that they were now entitled to had supported a real improvement in the welfare of LHSs and LHWs, with many reporting that since regularisation they had been able to make a real difference in their own lives and the lives of their families.

After I got transferred here I bought land to build my house in Jhelum City. My husband is working as a security guard, and we both jointly run our home with our jobs and are sending our children to good quality schools. Alhamdulillah. (LHS, Jhelum City, Punjab)

However, this was now being undermined by a general sense that following devolution their workload had increased significantly, but this was not reflected by a defined service structure, nor did they have access to full government provisions, such as pensions and medical allowances, as was expected by government employees. This perceived bias was reported to have affected their motivation and as a result was undoing their gains.

Our pay scale is much lower than the work we do. Each LHS has to visit 10 houses of each LHW every month. I have 18 LHWs reporting to me, as a result I am in the field almost every day and other than that I also have reporting and documentation work, have to report at the office and coordinate for medical supplies and referrals at the facility level. There is a definite need to review the service structure of LHSs and LHWs. (LHS, Mirpur District, AJK)

Strength of the evidence – Moderate: this Evaluation provides qualitative evidence to identify the two key drivers of empowerment for LHWs and LHSs. Without primary quantitative data collection, we cannot quantify the impact on empowerment, such as whether it materially increases resources within the household.

5.5 Sustainability

5.5.1 To what extent is there effective political will and stakeholder commitment at national and provincial level for continuing the LHWP?

Governments in all regions have expressed strong and continuing support for the LHWP; it is also seen as valuable by non-government stakeholders. There is evidence of continuing effective political commitment where provinces have taken over funding of the LHWP, and have announced plans to increase coverage. However, this has been accompanied by a lack of strong political engagement with ensuring effective programme management.

While it was reported that political commitment had wavered in some since devolution, government stakeholders from across all regions reported a current high level of political support for the LHWP. In some cases, this commitment has been evidenced by real action. In Punjab and KP, the LHWP was integrated with other community-focused health programming. In Sindh, the entire programme budget has been shifted to the recurrent budget; in AJK, the salary component has been shifted to the recurrent budget; and Punjab and KP have announced plans to shift the entire funding of the LHWP to the recurrent budget. These are clear indicators of a strong political commitment to the LHWP and a recognition of the importance of the programme to achieving national and regional RMNCH objectives.

Regions have also announced plans to increase coverage which are demonstrative of a political commitment to the LHWP. For example, Sindh has announced the 'Expansion LHWP', KP has announced the KP 100 Days Plan, while all other regions have expressed the desire to increase the coverage of the programme to meet stated targets.

However, the evidence presented in this Evaluation suggests that there has been a lack of strong political engagement with ensuring effective programme management. Section 5.3.4 demonstrates significant weaknesses in management systems, while Section 5.3.5 provides evidence for a lack of high level engagement in using the evidence that is generated by the programme, with the exception of Punjab, where an independent evaluation was commissioned in 2018.

While there are constraints on the ability of the LHWP to produce consistent and accurate evidence through the LHW-MIS, the apparent lack of high-level demand for high-quality management information is surprising. While some indicators are more widely reported, in particular total LHW numbers and coverage, we do not find evidence of consistent management information related to supervision, stocks of supplies, or achievement of other programme objectives. The lack of high-level demand is therefore an indication of a lack of political commitment to the programme.

Strength of the evidence – Moderate: these findings are based mostly on interviews at the provincial and federal level.

5.5.2 To what extent is the LHWP affordable within the resources available for the sector?

While there have been improvements in the ability of the LHWP to fund current levels of expenditure, the current allocations of expenditure are heavily skewed towards the payment of salaries. Key functions necessary for the effective delivery of the LHWP remain underfunded, particularly as they relate to training, supervision, logistics, and monitoring.

While a full costing of the requirements of each management system is outside the scope of this Evaluation, it is possible to use the pre-regularisation cost structure, in particular the per LHW spend on non-salary allocations, as a benchmark for the increase in funding that would be necessary. The use of a pre-regularisation benchmark is useful, as it provides an indication of the full non-salary costs that are required in order to adequately fund the various management systems of the LHWP – such as training, monitoring, supervision, and the supply of equipment and medicines – to a sufficient level that is supportive of a LHW providing a high-quality level of service in her community.

Section 5.3.2 reports that the Fourth Evaluation of the LHWP⁶⁷ identified a per LHW expenditure of PKR 107,794, expressed in 2017/18 prices, of which 43% of this expenditure was allocated to non-salary costs. This implies the requirement that PKR 46,351 per LHW is allocated to non-salary costs. Table 11 presents the results of this analysis, providing the total expenditure required in the provinces for which we have current expenditure information disaggregated between salary and non-salary expenditures.

Table 11 Benchmark increases in current expenditure to appropriately fund the LHWP

	Current expenditure		Benchmarked expenditure		Total current LHWs
	Total expenditure (PKR millions)	Expenditure per LHW (PKR)	Total expenditure	Expenditure per LHW	
Punjab	11,095	248,878	12,801	287,155	44,580
Sindh	6,012	286,411	6,075	289,400	20,992
AJK	833	280,984	933	315,050	2,963

In order to provide an estimate of the total additional funding that would be required to adequately fund the LHWP, including an appropriate level of non-salary expenditure, we compare the average current expenditure per LHW in the three provinces for which we have information available (PKR 272,091) with the average benchmark expenditure per LHW (PKR 297,202).

⁶⁷ OPM (2009a).

With an approximate 90,000 LHWs across Pakistan, this would imply a total additional funding of PKR 2,260 million annually across Pakistan to provide for an appropriate level of non-salary expenditure that is supportive of functioning systems on which LHWs rely. This is equivalent to 0.67% of total government health expenditure, or 0.75% of total provincial government health expenditure in 2017/18.⁶⁸

Without a significant increase in expenditure, it is likely that there will be a continuation of the erosion of key management systems, as has been described in Section 5.3.4.

Strength of the evidence – Strong: while a full mapping of the additional costs to meet the non-salary expenditure needs is outside the scope of this Evaluation, evidence provided in this report gives a clear indication that the current allocation of expenditure is highly skewed towards salaries, resulting in funding gaps for key systems.

⁶⁸ Government of Pakistan (2019) *Pakistan Economic Survey 2018/19*.

6 Conclusions and lessons learned

6.1 Conclusions

6.1.1 Overview

Previous evaluations conclusively demonstrated that the LHWP has been an effective instrument for achieving RMCH objectives, as set out in the LHWP Programme Theory. The quantitative analysis undertaken for this Evaluation shows that this continues to be the case, and that there is strong evidence for a positive effect of the LHWP on, in particular, family planning and maternal care, and on polio immunisation. The impact of the LHWP is also greatest for poor households when they are served. However, the overall impact of the LHWP has declined compared to the last full evaluation in 2008/9; this is unsurprising since this Evaluation notes that several systems – for, in particular, supplies and medicines management, refresher training, and supportive supervision – have not been functioning.

The processes of devolution and regularisation that have taken place since the previous evaluation have presented both opportunities and challenges for the LHWP. Devolution has enabled greater adaptation of the LHWP to perceived needs and priorities by provinces, including integration within wider provincial RMNCH strategies (for instance, in KP and Punjab). Regularisation produced an initial boost in motivation and empowerment for LHWs.

The main challenge has resulted from the substantial increase in LHWP costs produced by the regularisation decision. Since this cost increase was not fully reflected in increases in the budget for the programme, this led across all regions to financial stress in the form of delays in salary payments and a severe squeeze on non-salary costs. These especially affected supervision (through a lack of resources for transport), training, the ability to serve geographically remote areas, and the provision of drugs and other supplies. As provinces have taken over full responsibility for the financing of the LHWP, the situation has to some extent improved, though this varies by province. Territories dependent on federal funding have continued to face significant affordability problems. LHW morale has been adversely affected by these problems, contributing to worsening labour relations and resorts to strike action.

LHWs continue in all regions to be seen by both government and non-government stakeholders as having a crucial role to play in RMNCH policy. Political commitment to the LHWP has been strong at a policy and rhetorical level. However, this commitment has been reflected only partially in financing decisions, and has not led to sufficient attention paid to ensuring effective management of the LHW system (for instance, to ensure effective operation and quality control of the MIS, and the use of MIS data to inform decisions in a systematic way). Political interference in recruitment and the selection of areas for LHW deployment was also widely reported.

The Evaluation findings suggest that the impact of the LHWP could be increased (within the current level of programme financing) by ensuring that LHWs are deployed

to the areas of highest need, that they focus on the poorest and most marginalised clients, and that resources are shifted from salaries to non-staff expenditure to ensure supplies are available and supervision can be carried out.

6.1.2 Provision of inputs

In relation to the key elements of the ToC for the LHWP, the quality and quantity of government inputs has generally declined since the 2008/9 Evaluation.

Policy and institutional framework

Where the LHWP has been integrated with broader RMNCH and related strategies at the province or territory level, this can in principle facilitate a more effective approach and efficient deployment of resources, compared to operating LHWP as a vertical programme. While progress has been made in several regions in formal integration, this process has yet to be fully implemented at a management level, and coordination problems were reported across all regions (except for AJK). LHWs have taken on additional functions in some regions.

In principle, there remains a formal federal role in coordination, information sharing, and oversight of the LHWP across regions, but this has not been effectively fulfilled. Most stakeholders considered that there was a potentially useful federal function to support the sharing of information and lessons, and for more effective and efficient capacity-building approaches (for example, by developing a common curriculum). Most regions also considered that there was in principle scope for federal funding through the PSDP, though this has not proved a reliable funding source in the past; in Punjab, in particular, it was stressed that it was important for there to be full provincial control of the programme.

Planning and strategic management of the LHWP has suffered from a number of weaknesses, though planning and strategy documents have been produced at the provincial level. This includes a lack of effective implementation and risk mitigation strategies, and the use of evidence or clear strategic guidelines for decisions on the selection of areas to be covered. These failings have contributed to an excessive orientation towards serving relatively high-income clients, rather than the poorest and most marginalised.

Training

As a result of the squeeze on non-salary resources, regular and systematic training, either in the form of routine refresher training or for new functions, has not taken place. What capacity development initiatives have taken place have often been dependent on donor or vertical programme funding. However, progress has been made in updating the training curriculum in Punjab, KP, and Sindh in line with job description revisions. Punjab has undertaken systematic refresher training since 2017, while KP undertook some refresher training in 2018, but in no other region has this taken place.

Human resource management

Recruitment criteria for LHWs have not been revised, though in Sindh, Punjab, and KP it has been recognised that there is a need to revise the education qualifications for the LHW role, and job descriptions have been revised to reflect expanded responsibilities. The escalation of salary costs has led to restrictions on recruitment, including the designation of LHWs as a 'dying cadre' in Punjab and AJK (though the dying cadre status was lifted in Punjab after resistance from LHW unions), and a reliance on recruitment on contract terms (for instance, in KP). Where recruitment has taken place, it was reported across all regions that this was often subject to political interference (so that recruitment criteria were not always respected).

Regularisation has provided increased job security for LHWs. However, this was reported as having made it more difficult to terminate poor performers.

Monitoring and supervision

Although some progress has been made in the technological upgrading of MIS systems (in KP, Punjab, and Sindh), there is a lack of effective quality control for monitoring information, while data appears not to be used systematically to inform decision making, and is not comprehensively shared or analysed at federal level. Regular review meetings to inform programme management are not taking place.

Although there are no shortages of LHSs to carry out supervision of LHWs, except in Sindh, it was reported that the lack of resources for travel was undermining effective supervision in all regions, except in GB and ICT, while what supervision did occur was focused more on ensuring compliance than the provision of support, and often depended on out-of-pocket payments by LHSs. Punjab and Sindh have introduced an e-monitoring application for LHWs but this is not being effectively used.

Budget and release decisions

Delays in the release of PSDP funds and increased staffing costs following regularisation contributed to significant problems of financial management, in particular over the period 2012–17, including the accrual of salary arrears. When provinces assumed full responsibility for funding the LHWP, this led to some improvement in the flow of funds (and the clearing of arrears), although in KP the programme has suffered from delays in ADP releases. Funding problems continue in the regions that remain dependent on federal funding through the PSDP.

Supplies and logistics management

There was severe disruption to supplies (of drugs and equipment) in the initial period following devolution across all regions. This situation has improved somewhat in provinces as they have taken over full financial responsibility, but provincial procurement systems generally remain weak. Financial constraints continue to affect the availability of supplies in the regions that remain dependent on federal funding.

6.1.3 Mechanisms for effective LHWs

The general deterioration in the quality and quantity of inputs has reduced the resources available to LHWs to perform their roles effectively. This has (to varying degrees) negatively affected each of the key 'mechanisms' identified in the ToC.

Knowledge

LHWs reported that training when received was very useful in providing relevant skills but only in Punjab was refresher training being provided regularly. While this Evaluation did not seek to measure the quality of skills possessed by LHWs, the lack of regular training (and the limited supervision) is very likely to mean that LHWs do not possess the range or depth of skills that would be desirable.

Client engagement

LHWs generally reported that they had strong community relations and were able to engage effectively with clients. However, this was undermined to the extent that: (a) LHWs lacked necessary supplies for their clients; (b) inadequate referral services were available; (c) the expansion of LHW responsibilities (particularly for polio campaigns) meant that LHWs were working outside their home communities; and (d) weak inter-departmental linkages in the majority of regions have affected working relationships with staff at PPHI managing FLCFs.

Motivation

Increased pay and job security following regularisation have contributed to improved morale for LHWs. However, this has been undermined by delays in salary payments, inadequate provision of supplies and training, and increases in workloads, as well as by the lack of a defined service structure and access to pensions or medical allowances.

Empowerment

LHWs report themselves to feel empowered as a result of their important social role and the respect that this provides in their communities. This has been enhanced by regularisation, which has involved an increase in both status and earnings. Regularisation has helped to encourage collective action by LHWs in defence of employment rights and perceived interests. While this clearly represents a significant form of empowerment, it has posed challenges for management.

6.1.4 Gender and rights

In line with the programme theory articulated as part of the ToC, the LHWP when implemented effectively contributes to the rights of women and children. The LHWP has the capacity to reach marginalised communities and bridge the gap to FLCFs if it can prioritise expansion into the most marginalised communities. Moreover, the LHWP has, when properly resourced and implemented, the capacity to reduce inequalities in access to health, particularly for women and children. There has been a strengthening of employment status and rights for LHWs following regularisation.

6.1.5 Implications for improving LHPW performance

These conclusions suggest the following requirements for improving the performance and impact of the LHPW:

1. The provision of sufficient non-salary funding to ensure that LHPWs and LHSs are adequately resourced to perform their roles (in terms of availability of supplies, training, and logistics support).
2. The development and application of evidence-based criteria to determine the priority areas and clients to be targeted to maximise the impact of the LHPW relative to the level of resources provided.
3. A greater political focus on ensuring effective LHPW implementation as part of broader strategies to achieve RMNCH and related objectives.
4. The strengthening of monitoring systems, including effective quality control, and the systematic use of monitoring information to review and compare performance (including across regions) and to inform LHPW management.
5. The implementation of regular training around an appropriate curriculum for the LHPW role as it has developed in each region.
6. Addressing outstanding issues about the service structure and recruitment criteria and implementing more effective human resource management, including overcoming labour relations problems.
7. Encouraging sharing and coordination between regions, where feasible and where seen as providing mutual benefits. This could include monitoring approaches and systems, training, lesson sharing, and logistics planning. This may involve an explicit federal role, or could be done between regions under their own initiative.
8. The implementation of integrated approach to RMNCH (provided it is adequately funded and well-managed).
9. The strengthening of effective accountability to the ultimate beneficiaries of the programme.

The Evaluation has found that there is potentially scope for an enhanced federal role to address some of the weaknesses of the LHPW, in particular in coordination (for instance, to take account of potential economies of scale in procurement or training). However, to date it does not appear that the M/o NHR&C has performed this role very effectively, even within the constraints that have been faced. For instance, there has been only partial success in developing an integrated national LHPW-MIS, with none of the regions dependent on federal funding having completed digitisation or the supply of data to the system, and no success in making use of the integrated MIS data. Health officials in the largest province (Punjab) do not appear to regard enhancing the federal role as a priority (though for other regions it is seen as desirable). In consequence, proposals for an enhanced federal role would need to be linked to demonstrated ability to perform it, and would need to be in response to clearly expressed needs from regions.

6.2 Lessons learned

'Lessons' are understood as practically useful, evidence-based observations, potentially addressed to a wider audience beyond the direct stakeholders in the evaluated programme that emerge from the experience of the programme, but that (unlike recommendations) do not relate directly to improving the programme's performance.

It had been hoped that the Evaluation would yield clear lessons based on the comparative performance of the LHWP across provinces and territories, through identifying differences in programme performance and providing evidence on the reasons for these differences, including through the use of the comparative explanatory perspective provided by the Realist Evaluation approach. However, this has not in the event proved to be possible. This is because the differences in the most important aspects of context (notably adequacy of financing and the way in which devolution was implemented) were not in fact very large between regions. As a result, within the constraints of the evidence available to the Evaluation (i.e. depending on analysis of secondary survey data, and limited primary data collection, and without the scope for focused primary data collection that could generate statistically significant findings), it has not been possible to provide strongly evidenced comparative lessons about performance. One lesson that can be drawn at this level though is:

1. **An integrated approach to RMNCH that incorporates LHWs along with other parts of the PHC system (including related cadres of health workers such as CMWs, and links to primary care facilities) is likely ultimately to be more effective and sustainable.** In both Punjab and KP, steps have been made towards this (moving away from the original LHWP model). To date, non-salary funding constraints have continued to militate against programme effectiveness in both provinces, but in the longer term a coherent and integrated strategic approach is probably more likely to succeed than a programme with a vertical focus.

However, the following lessons of wider relevance can be drawn from the Evaluation:

2. **Long-term community health worker programme success founded on strong evaluation evidence, even with a relatively high level of political commitment, is not sufficient for the level of programme effectiveness and adequate financing and management to be sustained.** Evaluation evidence from the start of programme implementation up to 2009 consistently provided strong evidence of effectiveness, and clear pointers in the form of recommendations for improvement were produced. In the event, the effectiveness of the programme has been sharply reduced since then, with backward steps made in all the main areas in which the previous evaluation made recommendations.
3. **A lack of effective accountability to ultimate beneficiaries and clients is likely to have contributed to the declining performance of the LHWP.** Key decisions that have negatively impacted on the LHWP, most notably the way in which devolution was implemented and the regularisation decision, resulted

from constitutional, legal, and political decisions that were made with little apparent reference to their consequences for programme beneficiaries, in particular the most marginalised and poorest women and children, who have been the main losers from the way in which these decisions have affected programme implementation. This points towards the need to strengthen effective accountability to clients and service users in community programmes, in addition to strengthening upwards accountability (through strengthening MIS systems, for instance) so that programme implementation can be as responsive as possible to need.

4. **Some factors that lead to the empowerment and improved status of service providers do not necessarily contribute to the empowerment of their clients.** The regularisation of LHWP staff contributed a boost to their social status and earnings, as well as to fostering organisation and collective action. This might have had a net positive impact on programme performance, including for the empowerment of poor and marginalised women, if it had led to large increases in the motivation and effective community engagement of LHWP staff. In the event, the large unplanned financial consequences of regularisation undermined both programme performance and the morale of LHWs (as the payment of promised salaries was delayed, and supporting resources for the programme were squeezed).

7 Recommendations

In what follows we draft an initial set of recommendations. We expect these to be updated in the final draft following consultation with the Evaluation Steering Committee and the Technical Working Group that has been assigned to this Evaluation. The recommendations are based on an initial reflection of the evidence produced by this Evaluation, the implications that they generate for improved LHWP performance, and the lessons that have been drawn from that evidence.

The recommendations are based on the assertion that when properly resourced and managed, the LHWP has been shown to produce positive results, and indeed this Evaluation demonstrates that the programme is, despite the current constraints in which it is delivered, still producing positive results for long-term health outcomes.

7.1 National recommendations

Recommendation	Discussion	Relevant stakeholders	Timeframe
Resolve funding issues for AJK, GB, and ICT	<p>AJK, GB, and ICT are dependent on funding through the PSDP in the M/o NHR&C budget. However, both have experienced severe delays in the release of PSDP funds that have compounded the pressure on programme finances resulting from regularisation.</p> <p>Looking forward, the current cost structure across all of the territories under federal responsibility does not appear to be appropriate for future budgeting. Costs are heavily skewed towards salary costs, and do not provide sufficient resources to enable LHWs to be effectively managed, supervised, and resourced. There is a need to comprehensively map resource requirements on a set of clearly defined criteria that match the need for the current complement of LHWs, LHSs, and other programme staff.</p>	M/o NHR&C, Ministry of Finance	Immediate
Provide short-term federal finance for funding gaps	<p>There is a case for the provision of additional short-term federal finance to be provided to those regions (including provinces) that want to draw on it. Current cost structures across the provinces are heavily skewed towards salary costs at the expense of resources that enable an LHW to perform effectively. Short-term federal funding could allow for provinces to bridge temporary funding gaps, and provide space for the provinces to move towards a more appropriate cost structure.</p> <p>Any short-term federal funding should be strictly defined by the funding gap that it is attempting to resolve, whether for training, drugs and equipment, logistics support, or adequately controlled LHW-MIS data. It should be directly tied to achieving specifically defined enhanced results that sustainably strengthen systems weakened by a long period of underfunding. This short-term financing would therefore require the development of an appropriate results and management framework.</p>	M/o NHR&C	One year

Recommendation	Discussion	Relevant stakeholders	Timeframe
Strengthen capacity to support coordination and use of evidence	<p>In all provinces, with the exception of Punjab, stakeholders called for an enhanced role of the federal level in the analysis and use of evidence to inform policy making and management. This reflects a general lack of capacity at the provincial level to fulfil this role. However, this needs to be linked to evidence of the capacity to deliver this function. The establishment and adequate funding of the HSPIU is a positive step in this direction, enhancing the ability of the federal level to provide relevant programme implementation and policy data analysis, but this should be accompanied by a revitalisation of the practice of quarterly review meetings with the provinces.</p> <p>The M/o NHR&C could also consider the establishment of an inter-provincial forum for LHWP programme managers to encourage sharing and coordination between regions, where feasible and seen as providing mutual benefits. This could include monitoring approaches and systems, training, lesson sharing, and logistics planning.</p>	M/o NHR&C	One year
Provide provinces support in strategic planning	Where acceptable to the provinces, this will help to align the implementation of the LHWP, other vertical programmes and provincial health systems to National Vision Action Plans and to support a concerted effort towards the provision of UHC.	M/o NHR&C	One year
Enhanced political engagement supported by maintaining the LHWP as recurring agenda item on intra-ministerial meetings	<p>In order to support enhanced governance and accountability of the programme, the LHWP could be maintained as a recurring agenda item on intra-ministerial meetings chaired by Minister NHR&C.</p> <p>This should be supported by the provision of evidence against the key performance indicators of the LHWP, in order to track progress over time.</p>	M/o NHR&C	Immediate
Support to provinces to allow for a unified LHW-MIS	In order to allow for data which is comparable across regions and that can be used for regional and national level planning.	M/o NHR&C	Three years

7.2 Provincial recommendations

Recommendation	Discussion	Relevant stakeholders	Timeframe
LHWP funding and budgeting	As LHWP funding across the provinces continues to stabilise now that the provinces have assumed full financial responsibility for the funding of the LHWP, there is an urgent need to review the programme's cost structure. The current cost structure does not appear to be appropriate for future budgeting, nor supportive of	Provincial governments in all provinces	Immediate

Recommendation	Discussion	Relevant stakeholders	Timeframe
	<p>sustaining an appropriate level of service provision by LHWs.</p> <p>As a result, there is a need to develop and implement financing strategies to achieve a sustainable level of non-salary funding for LHWs to be effectively managed, supervised, and resourced. This Evaluation has produced an indication of the increased level of non-salary expenditure required. However, there is a need to comprehensively map resource requirements on a set of clearly defined criteria that match the need for the current complement of LHWs, LHSs, and other programme staff.</p> <p>Achieving an appropriate cost structure for the LHWP is the most pressing need for the programme across the provinces, and the ability of the provinces to respond to any further recommendations presented in this report is limited by this constraint.</p>		
Limit expansion of the programme until an appropriate	<p>Across the provinces, the LHWP should limit expansion into unserved areas until it has achieved an appropriate cost structure that provides LHWs with the resources that they need to effectively deliver high-quality health services to their communities.</p> <p>Expansion of the programme under current funding constraints, and with the current insufficient levels of non-salary expenditure risks further undermining the ability of an LHW to effectively perform and provide an adequate level of care.</p>	LHWP programme managers in all provinces	Immediate
Expand LHWP to priority areas based on evidence	LHWP impact can be enhanced by expansion into areas of greatest need as defined by marginalisation and health need. Evidence on current practice suggests that programme expansion occurs based on ease of expansion, with the programme expanding to unserved areas in proximity to served areas. This approach should be replaced by an assessment of health needs and the adequacy of the supporting health system to meet this need.	LHWP programme managers in all provinces	Three years
Adopting an integrated approach to RMNCH, nutrition, immunisation, WASH, and health education	<p>KP and Punjab have both adopted an integrated approach to RMNCH, nutrition, immunisation, WASH, and health education. While the final effectiveness of this approach is yet to be determined, and has been undermined by on-going constraints on non-salary funding, there is positive evidence that this has contributed to improved inter-department coordination between those responsible for managing the delivery of RMNCH, nutrition, and immunisation programming.</p> <p>Ultimately an integrated approach to the delivery of RMNCH, nutrition, and immunisation programming is more likely to provide a more cost-effective and coherent approach than the maintenance of the vertical structures. However, other provinces should learn from the experience of implementation in Punjab and KP. In particular, the need to carefully articulate the roles and</p>	Department of Health in Sindh, Balochistan, AJK, GB, ICT	Three years

Recommendation	Discussion	Relevant stakeholders	Timeframe
	<p>performance management of the various cadres of frontline staff involved, including LHWs, CMWs, and staff at PPHI, to discourage competition and encourage collaboration.</p> <p>Roles, responsibilities, and caseloads for the various frontline cadres should be carefully mapped to the capabilities and capacities of each cadre to ensure that no cadre is overburdened.</p>		
Systems strengthening	<p>There are a number of key and poorly performing systems that are common across all provinces that should be addressed. These include the procurement of medicines and supplies and the process for dealing with the poor performance of LHWs.</p> <ul style="list-style-type: none"> • The procurement process is not well managed. Other provinces should learn from the experience of Punjab and move away from a system of assigning resources based on a quota. As in Punjab, provinces should consider the procurement and distribution of supplies on the basis of need. In all provinces, this would be supported by the development of an integrated logistics MIS that can accurately track resources and resource needs. • The LHWP currently does not have an effective process for dealing with cases of non-performance or non-willingness to work. This needs to be addressed so that non-performing LHWs can be terminated efficiently. • Capacity building and training is not occurring in Sindh and Balochistan. While Sindh has updated its curriculum, both provinces need to revitalise the process of refresher training. Knowledge is a key mechanism in the ability of an LHW to effectively perform, and the continued lack of refresher training will undermine this. • The programme across all provinces has a deficit of functioning vehicles, this needs to be addressed as it greatly hinders the ability of LHSs to provide adequate supervision. 	LHWP programme managers in all provinces	One year
Governance and management strengthening	<p>Looking forward, there are a number of issues that programme managers need to address that will be supportive of increasing the effectiveness of the programme</p> <ul style="list-style-type: none"> • Enhancing accountability needs to be addressed in all provinces. To support this, there will need to be strengthening of the programme's monitoring and provision of management information. There needs to be a more systematic reporting of both operational and health outcome targets to allow 	LHWP programme managers in all provinces	One year

Recommendation	Discussion	Relevant stakeholders	Timeframe
	<p>programme managers to respond quickly to changing circumstances.</p> <ul style="list-style-type: none"> • There is a deficit in accountability in all provinces to the ultimate beneficiaries and clients of the programme. This would be enhanced by giving further responsibilities to district management. This would require accountability mechanisms to be developed and implemented at that level to monitor performance. • There needs to be development and implementation of risk mitigation strategies. While some provinces have identified risks to programme delivery, no province has developed or implemented any risk mitigation strategy. 		

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Annex A Terms of reference



Annex B

Terms of Reference (ToR) for Consultancy Services

Requesting Section/Field Office: UNICEF Pakistan, Health Section (for M/o NHSR&C)

1. PROGRAMME AREA & SPECIFIC PROJECT INVOLVED:

Output: By 2022, Federal, Provincial and District level health sector policies, plans and budgets use solid evidence to strengthen integrated health interventions.

2. NATURE & PURPOSE OF CONSULTANCY:

1. Context and Programme Description

1.1. Country Context

- As per 2017's Census, the population of the country is 213.7 million (including Azad Jammu & Kashmir (AJK) and Gilgit Baltistan), which is expected to rise to more than 282 million by 2030. Share of the current urban population is 34.4 per cent, which is expected to rise to 37.7 per cent by 2030. In future, the demand for and size of the human resources for health including LHWs are forecasted to grow substantially as a consequence of population and economic growth.
- Pakistan is undergoing a slow and interconnected epidemiological and demographic transitions. The country is facing a double burden of disease (BoD). Life expectancy for both sexes has improved from 33.8 years in 1951 to 68 years in 2015. Infant Mortality Rate (IMR) has declined from 106.4 in 1990 to 61.2 deaths per 1000 live births in 2017. However, decline in the neonatal mortality is comparatively very slow from 63.6 per 1,000 live births in 1990 to 44.2 in 2017 (UN Interagency estimates). The fertility decline in Pakistan started only in the late 1980 and later gained momentum in the 1990s. Pakistan still has a very high fertility rate i.e. 3.8 children per women (PDHS 2013-14), with a situation being much worse in the rural areas.
- According to UN interagency estimates, maternal mortality ratio declined to 181 per 100,000 live births in 2015, with positive rise in the skilled birth attendance reaching at 52 per cent (PDHS 2013-14). Maternal deaths prevail due to preventable causes such as haemorrhage and sepsis, combined with high neonatal mortality rates due to prematurity, birth asphyxia and sepsis. Half of women of reproductive age are anemic (50.4 per cent). The situation is rendered worse by an increasing population, with Pakistan now the fifth most populous country in the world having an inter-censal average annual growth rate of 2.4 per cent during 1998-2017, modern method contraceptive prevalence of 26 per cent and unmet need for birth spacing of 20 per cent (PDHS 2013-14).
- In young children, diarrhoea and respiratory illnesses remain as the major killers. The estimated prevalence of various forms of malnutrition conditions in children under 5 years is: 31.6 per cent underweight, 10.5 per cent wasting, 3.3 per cent severe wasting, 45.0 per cent stunting and 4.8 per cent overweight. Fully immunized coverage (record & recall) increased from 53.8 per cent (PDHS 2012-13) to 82 per cent (PSLM 2014-15). However, vaccine preventable diseases and new emerging infections call for strengthening disease surveillance and response system. High government commitment and partners engagement resulted in a dramatic drop in the number of polio cases to only 08 cases reported from 7 districts in 2017, as compared to 306 cases in 2014.
- Communicable diseases are prevailing with endemicity of hepatitis B and C with 7.6 per cent affected individuals; more than annual 518,000 cases - the 5th highest tuberculosis burden in the world, and focal geographical area of malaria endemicity. The overall HIV prevalence is less than 0.1 per cent but having concentrated epidemic among high risk groups.
- Non-Communicable diseases now constitute more than half of the BoD. One in four adults over 18 years of age is hypertensive, coupled with elevated smoking levels. Pakistan is ranked 7th in the

world for diabetes prevalence. Disability due to blindness or other causes is also high and services for disabled population are limited with insufficient provision of assistive devices to improve their quality of life. Injuries account for more than 8.4 per cent of the total BoD.

- The health system functions and operations are frequently disrupted by acute crises such as floods, droughts, earthquakes, manmade emergencies as well as disease outbreaks such as Dengue and Measles. Chronic factors affecting the health systems include low health workforce density, low hospital bed to population ratio and low level of capacities for meeting international health regulations mainly due to low GDP allocation to social sector and over-arching governance challenges affecting the public sector.
- Pakistan has implemented an economic reform agenda while ensuring macroeconomic stability. The economy continues to maintain its growth momentum above 4.0 percent for the 4th year in a row with highest growth at 5.5 percent in 10 years in 2018. Per capita income is an indicator of economic well-being and has increased to \$1,629 in FY 2017. According to World Bank, Pakistan's staggering fall in poverty over the last 14 years has not been accompanied by a similar improvement in social wellbeing. The country's long-term growth depends on this investment in its people - this is what will make growth matter for Pakistanis. The government's next challenge will be to invest in health, education and nutrition.
- According to the National Health Accounts (2013-14), the Total Health Expenditure (THE) was US\$7.72 billion (3 per cent of the Gross Domestic Product) and US\$39.5 per person per year. Share of the Government Health Expenditure (GHE) was 31.4 per cent of the THE and less than 1 per cent of the GDP. Share of donors is less than 1 per cent of the THE. The Government health expenditure fell down significantly during devolution in 2011, but increasing at a significant pace since 2012-13. GHE increased from Rs.42.09 billion (0.23 per cent of GDP) in 2010-11 to Rs.291.90 billion in 2016-17, which is 0.91 per cent of the GDP. It is expected that the public sector expenditure will cross the milestone of 1 per cent of GDP in 2017-18.
- As a result of devolution, a number of strategic and significant changes were made in the entire government structure. The Ministry of Health was abolished on 1st July 2011 and national health programmes were devolved to the provinces. In 2013, the Ministry of National Health Services, Regulation and Coordination (M/o NHSR&C) was re-created with the mandate to provide a common strategic vision to guide the health sector according to the Government of Pakistan's Vision, which is to achieve universal health coverage (UHC) through efficient, equitable, accessible and affordable health services to its entire populace; to coordinate public health and population welfare at national and international level; fulfil international obligations and commitments; provide oversight for provincial and national health regulatory bodies, enforce drug regulations, and regulation of medical profession and education. Along with other programmes under health, the LHW programme was also devolved to the respective provincial governments.

1.2. Description of the Object of Evaluation - LHW Programme

- The Government of Pakistan (GOP) launched the Lady Health Workers' (LHW) Programme through the Ministry of Health and Provincial/Area Departments of Health in 1994 to ensure provision of primary, preventive, promotive and some curative care services at the door-step of community mainly in rural and urban slum/ densely populated areas. The overall goal of the LHWP was to contribute to poverty reduction by improving the health of the people of Pakistan. The main objective was to increase utilization of promotive, preventive and curative services at the community level particularly for women and children in poor and underserved areas. In order to achieve these aims and objectives,

the Programme recruited women (LHWs) and trained them to provide family planning services and primary health care in their own communities

- The LHWs are recruited through a well-defined process according to strict selection criteria, which is, age between 18-45 years, being a local resident, at least 8 years of schooling, preferably married, and being acceptable to the community. Recruitment of LHWs is followed by 15 months of basic training at the First Level Care Facility (Basic Health Unit and Rural Health Center) or Tehsil headquarter hospital, by the staff working over there in two phases, using Programme training manuals and curriculum. The first phase of basic training is of five days a week for three months. The second phase of training lasts for 12 months with three weeks of field work followed by one week of classroom training each month. The basic training of the LHWs is complemented by one day "Continuing Education Session" each month and 15 days "Refresher Training" on various topics every year. The Programme design is such that it has a strong network of implementation units at federal, provincial and district levels.
- The LHWs' programme (LHWP) was evaluated independently in 2001-2002 through the UK's Department for International Development (DFID) support (third evaluation) and in 2008-09 with the support of Canadian International Development Agency (CIDA) and the World Bank (4th evaluation). It was demonstrated that the Programme was certainly having more positive impact on health outcomes, health status and per unit of cost than comparable alternative services provided through the public health system. Results indicated that the Programme was providing more services to low income and poor households than any alternative service provider in the public sector. Considering positive outcomes of the Programme, the government decided to scale up the programme coverage and the number of LHWs was increased to 105,000 by 2011. Although devolved to provinces, budget of devolved national health programmes including LHWP is still reflected in the budget of federal government/ M/o NHR&C, after the decision of Council of Common Interest.
- The Programme is entirely dependent on the LHW for service delivery. LHW has proven to be a true 'agent of change'. Various studies and evaluation reports have established the usefulness of the LHWs. However, LHWs are dependent on continuing provision of referral PHC services through Basic Health Units (BHU), Rural Health Centres (RHCs) and Tehsil and District Health Quarter Hospitals managed by the Departments of Health. The LHWs organize communities through health committees and women's groups and bridges the gap between beneficiaries/ families and the primary health care delivery system.
- Currently, the programme is funded by the federal government through the M/o NHR&C at a level of Rs. 16.4 billion annually with additional funding from the provincial governments on RMNCH interventions. In past, different donors mainly DFID, WB and others provided financial support mainly as budget support to the programme, while the programme also benefitted technical support from UN agencies and donor & partner organizations.

1.3. Objectives and Scope of LHW programme:

- The LHWs' Programme is based on primary health care agenda and places special emphasis on reproductive, maternal new-born child and adolescent healthcare and nutrition. The protection of mothers and children is singled out because of their special needs that must be met to ensure not only the survival but also the healthy development of the foetus, child and mother. Promotive, preventive and curative healthcare makes it possible to minimize health problems or disabilities in adult life and bring about improvement in the overall health of the population and in the quality of life of the individuals. Investment in the health of women and children is a direct entry point for improved human resources, social development and productivity. The programme is being implemented in all districts of the country mostly covering rural and urban slum areas. Ultimately, the coverage of the

programme should include all rural areas and 30 per cent of the urban areas mainly urban slums and thickly populated urban areas.

- There have been a number of important changes in the context since 2008-2009 such as: (i) the Programme scaling up the number of LHWs to 102,000 mostly in rural areas; (ii) after devolution, there is a declining trend in the number of LHWs (92,949 by the end of 2017); (iii) on the decision of court, LHWs have been regularized as government servant (BPS scale 5); (iv) Operational linkages with the federal government are almost non-functional; (v) there was a sudden drop in overall public health expenditure during devolution followed by significant rise both at provincial and federal level but not necessarily for the vertical priority programmes; (vi) a number of reforms including varying integration of LHWP, Maternal New-born and Child Health (MNCH) and Expanded Programme on Immunization (EPI) in addition of new initiatives in the areas of RMNCAH; and (vii) recent strategic focus of the government towards UHC including non-communicable diseases and health system strengthening.

1.4. LHW Interventions

- The programme was mainly designed for provision of family planning, Primary, Preventive, Promotive and some curative care services to people mainly in rural areas and urban slums/ densely populated areas. However, the programme played a key role in women and social empowerment and increasing employment opportunities especially for women.
- Trained LHWs deliver preventive RMNCH & Nutrition care services such as antenatal (e.g. screening of pregnant women to identify those at risk, immunization of pregnant women with tetanus toxoid to prevent neonatal tetanus and tetanus in the mother), providing iron folic acid tablets to pregnant mothers, counselling on nutrition, natal (e.g. helping the mothers get access to skilled birth attendants and proper care during delivery) postnatal (identification of danger signs for mother and new born, early initiation of breast feeding, delayed bathing, weight at birth), raising awareness about birth spacing and providing contraceptives, immunization of children under 02 year and childcare for prevention of diarrhoea and respiratory diseases. LHWs also provide services related to prevention and screening of priority communicable diseases and management of common ailments.
- The LHW through her limited monthly supply of essential drugs is able to treat simple illnesses, such as diarrhoea and minor cases of upper respiratory infections, which together constitute the main cause of mortality of the under five year of age children. Common illnesses managed by the LHW include; fever, malaria, eye infections, intestinal parasites and anaemia. The LHWs are involved in the management of TB patients under the agreed DOTS strategy with the National TB Control Programme as well as in giving immunization to children and pregnant female. Lady health workers being the most important community health worker are playing a key role in polio immunization activities and measles campaigns.
- One LHW is responsible for approximately 1000 people, or 150 homes, and visits 5 to 7 houses daily. The scope of work and responsibility of LHW includes over 20 tasks, ranging from health education in terms of antenatal care and referral, immunization services and support to community mobilization, provision of family planning and basic curative care. In addition, the house of each LHW has been declared as a Health House, where people can come in case of emergency to receive basic treatment or guidance. The LHWs are also accountable for maintaining comprehensive records for all patients under their charge by updating family register at the health house to reflect medical histories and health conditions of each member. Moreover, they also send their monthly reports containing information about indicators of maternal and child health, family planning and basic curative care. Hence, this meticulous record keeping allows for the LHWs to keep track of individuals in order to

proactively provide services. Quality of care by the LHWs is maintained through a well-established supervisory network from the community up to the provincial level. The monitoring and supervisory cadres include Lady Health Supervisors at a ratio of 1:20-25 LHWs, Field Programme Officers and the management setup at the District and Provincial level.

- Currently, approximately 93,000 LHWs are working across all the districts of Pakistan, providing PHC services to the population of rural and urban slum areas. Each LHW is supplied with basic items for her health house and essential drugs to treat minor ailments in addition to contraceptives. All of these contraceptives and supplies are provided free of cost, to the population, in the catchment area of each LHW. The procurement system for these supplies has been devolved to provinces. The demand is generated from districts and a consolidated tender for drugs, non-drug items and stationary is advertised annually from the provincial office. In the last project period, the average cost of each LHW was approximately Pak Rs 44,000 (US\$ 570 approx) per year. This included their salary (more than 50 per cent of the total), medicine and supplies, management costs, supervision and training costs for the whole year. The entire budget was provided by the Government of Pakistan.
- Voice and accountability along with coordination and partnership development are other notable key features of the LHW programme.

1.5. Programme Logic Model/ Theory of Change

Generally, Theory of Change (ToC) approach is not used in preparation of the project proposals (PC-1s) of the Government of Pakistan. However, currently many PC-1s (including common PC-1 of the LHWP before devolution) are using logical framework approach. Also, after devolution, some integrated PC-1s were produced by the provincial DOH, which include logical frameworks, which could support devising an adequate Theory of Change for the evaluation. Previous evaluations also tried to develop a pathway of change in order to assess the programme, however, these attempts do not suffice as a TOC for the current programme that has significantly changed from its earlier version. Moreover, since devolution, the scope of work of the LHW programme has changed significantly as provincial governments have developed their own mechanisms to implement the programme. Therefore, it is possible that there are different ToCs at work within various provinces. The selected evaluation team will have to carefully review all documents, interview all key stakeholders in all the provinces to capture the provincial variations, if any. In consultation with all key stakeholders, in the inception phase, the selected evaluation team will be required to formulate or re-construct a ToC for the programme and will have to present the same to the evaluation steering committee and reference group for endorsement.

1.6. Key stakeholders

Following are the key stakeholders of the LHW programme at various tiers:

- **Federal:** M/o NHR&C, Ministry of Planning, Development and Reforms, Ministry of Finance, UN agencies, bilateral and multilateral donors and international NGOs.
- **Provincial:** Departments of Health/ LHWP, Partner Programmes, Departments of Planning and Development, Departments of Finance, and Local NGOs.
- **District:** Local governments, District Health Offices, Health providers, NGOs, lady Health Supervisors (LHSs) and Lady Health Workers (LHWs).
- **Community:** Concerned population (women, men and children) of the designated catchment areas, Health Committees, Women Groups and beneficiaries of services.

2. The Evaluation

The M/o NHR&C, with assistance from UNICEF Pakistan and GAVI, is interested in conducting a thorough and robust evaluation of the LHW programme in the country. The evaluation will focus on examining changes over time and support federal and provincial governments' plans on how to further amend and strengthen the programme and its scope in future with following details:

2.1. Purpose of Evaluation

There are various key reasons for conducting this evaluation. RMNCH indicators are showing some improvements but there are also concerns about slow progress in underperforming districts is increasing as well as for overall very low Universal Health Coverage (UHC) index for the country in 2017. The National Health Vision of the Government of Pakistan aims to improve health of Pakistanis, particularly women and children by ensuring provision of UHC. This vision among other things, also means a stronger, more proactive and effective role for LHWs. The M/o NHR&C is interested to handover the current LHW programme (including current cost on the recurrent budget of the provincial DOHs) and provide additional resources to the provincial/area governments for scaling up the programme with required changes in the scope of work of the programme considering expected role of LHWs in achieving UHC. Therefore, there is a need to undertake evaluation of this programme now in order to utilize the lessons learnt and key findings in improving the programme in accordance with the National Health Vision and formulating a revised strategic plan of the programme for future planning.

The primary recipients of this work will be the Government of Pakistan (more specifically the M/o NHR&C and the Provincial/Area Departments of Health), Ministry and Departments of Planning and Development, Ministry and Departments of Finance, Donors, UN agencies and other partners.

The secondary recipients will be the women, children, families, communities, health care providers, policy makers, opinion leaders and partners.

2.2. Evaluation Objectives

The objectives of the Evaluation are:

- to provide the M/o NHR&C and DOHs and other stakeholders with accurate, credible, and usable information on the performance of the LHW Programme under the changing context;
- to examine changes in the programme performance since the 4th evaluation in 2008-09 and the devolution in 2011 against the DAC criteria for evaluation;
- to explore the determinants of this performance (internal and external, such as the enabling environment) and the system support;
- to review and assess the benefits of LHW programme received by the entire health system in various ways, especially where the LHWs are used by various stakeholders for supporting their programmatic objectives;
- to document the socio-economic benefits to the LHWs and Lady Health Supervisors (LHS), their families and communities of working with the programme, and
- to provide analysis and recommendations on how to further strengthen the programme's performance.

2.3. Evaluation Scope

Geographically, the evaluation will review the current performance of the programme throughout the country including all provinces/areas. Temporally, it will take into account the progress since devolution and the last evaluation in 2008-09 to collect lessons and recommend future course of action and with a revised scope of work for improved performance. Programmatically, the following scope of work must be covered by the evaluation team:

The firm/ organization will be required to review & assess the following dimensions of the programme:

- The relevance of LHWP in relation to national, provincial and global health sector priorities.
- The objectives of the LHWP and their contribution to the national health sector strategic plans as well as the UHC framework.
- The progress and achievements of LHWP in relation to expected results since 4th evaluation and more specifically devolution of the programme in 2011.
- The extent to which LHWP objectives were achieved over the period (in the light of the agreed Theory of Change)
- The progress of LHWP towards full DOHs/ ownership and leadership of the program.
- The performance and efficiency of LHWP in terms of utilization of funds vis-a-vis achieved results– the extent to which costs of the activities can be justified by the results.
- Other ongoing programme in the areas of RMNCAH as well as support from UN organizations and other partners and their direct/indirect effects on LHWP.
- The efficacy of programme structure and systems to manage with regard to coordination, supervision, results reporting, financial management, procurement and monitoring and evaluation.
- Review of the implementation of the risk analysis, mitigation and management processes established within LHWP, risk evaluation, mitigation and management.
- The donor funding mechanism for LHWP.
- The linkages and possible synergies with other health initiatives and funds such as GAVI, etc.

Based on the above information, the consultants should reflect on the comparative advantages of LHWP in relation to other initiatives and provide inputs on the way forward to enhance future relevance and performance. The Evaluation is expected to give concrete and realistic recommendations with regard to future directions and management of the programme.

2.4. Evaluation Criteria

The LHWP should be assessed against the OECD/ DAC criteria of evaluation for the period since fourth evaluation / devolution of the programme in 2011. The evaluation team will be expected to use the OECD/DAC criteria comprehensively and must propose suitable methods to review the criterion accordingly. However, they are not expected to employ experimental methods or counterfactuals for the lack of baselines and time available for evaluation. The impact can be reviewed as long term outcomes of the programme. A robust, innovative and high quality evaluation design is expected to be provided by the evaluation team to adequately address some the data gaps and other challenges expected around the evaluation.

2.5. Major Evaluation Questions as per UNEG Criteria

All major evaluation questions are given in the following under the OECD/DAC criteria for the evaluation team to consider, discuss with stakeholders during inception phase and refine. All final questions must be provided in the evaluation matrix provided as Annex1 along with required details:

2.5.1. Relevance

- How relevant and meaningful are the programme objectives and activities in terms of addressing the needs and priorities of marginalized and vulnerable children, men and women, particularly with

regard to identified child rights, in the programme areas?

- To what extent are the objectives of the LHWP consistent with health sector strategic plans and the National and Provincial Development Plans and other national and international commitments such as with SDGs agenda, UHC, National Health Vision 2025 and Pakistan Vision 2025?
- What is the relevance of the programme under the constitutional rules of business of the federal and provincial government?
- How relevant is the selection and targeting of programme areas (rural and urban) with regard to objectives?

2.5.2. Effectiveness

- To what extent has the Programme achieved its objectives/ outcomes and what were the major factors influencing the achievement or non-achievement of the objectives/ outcomes?
- To what extent has the implementation of strategies and programme approaches worked as intended, particularly after the last evaluation in 2008-09 and 2011's devolution and subsequent adjustments?
- How effectively various Government departments, who used the LHWs for their sectoral objectives, coordinated among each other?
- To what extent the burden of work and number of tasks given to LHWs supported or hindered in achieving programme results?
- To what extent has the programme contributed to stronger awareness of communities in health, nutrition, education, WASH and social protection related services?

2.5.3. Efficiency

- How well resources, both human and financial, been managed to ensure the timely, cost-effective and efficient attainment of results? To what extent costs incurred can be justified by the results achieved?
- How effective the funding mechanism and contributions for the programme have been within committed departments to support achievements of desired results?
- To what extent planning, budgeting, monitoring and evaluation, supervision, coordination, logistics and financial management systems are functioning well in support of the programme objectives?
- To what extent has the programme leveraged additional resources to address identified gaps?
- What is the unit cost per LHW and per beneficiary with any variance among provinces/areas.

2.5.4. Impact (Long-term Outcomes)

- To what extent has the programme achieved its goals and long term objectives in enhancing the health outcomes especially of women and children in the catchment communities?
- To what extent the programme has been able to contribute to ownership and leadership of the provincial/area DOHs?
- What have been the major factors influencing the achievement or non-achievement of outcomes?
- To what extent the programme learned and evolved over the years and whether there were other alternative, more cost-effective strategies available to reach intended results?
- How far the Programme has been successful in covering hard to reach areas and urban slums?
- How successful the LHWP has been in reaching the most vulnerable /marginalized groups in the target areas?
- What other changes (positive/negative, direct/indirect, intended/unintended) have occurred as a result of use of LHWP?

2.5.5. Sustainability

- How far government leadership and political was influenced for the achievement of results, or vice

versa?

- What evidence exists to inform the view that particular activities in the programme will continue if the funding from the federal government stopped? What are views and comments of stakeholders in this regard?
- What internal/external factors and drivers contribute to or constrain the sustainability of the programme?

2.5.6. Cross Cutting Areas (Gender, Equity, Human Rights, Disaster Risk Reduction)

- To what extent cross-cutting issues such as gender, equity, human rights based approach and DRR have been incorporated at various levels of planning and implementation?
- To what extent the process of managing and mitigating risks within LHWP (including internal and external processes) was achieved?
- What have been the key lessons and experience of Lady Health Workers and Lady Health Supervisors as agents of change and their contributions to other sectors?

2.6. Evaluation Methodology

- The evaluation team, in consultation with all stakeholders, will be required to first develop the Theory of Change (ToC) for the evaluation against which it will measure the performance of the programme. As per the agreed ToC, agreed by the reference group or steering committee, the evaluation team will propose methodology and the data collections methods. To achieve the desired outputs, the team leader is expected to suggest a robust methodology, in consultation with stakeholders, in the inception report. It is expected that the evaluation will use mixed methods using both quantitative and qualitative tools for a robust and comprehensive methodology to undertake a high quality, impartial, participatory, equity focused and gender responsive evaluation. The evaluators should provide a comprehensive evaluation design matrix with details of methods, sample size, evaluation questions and indicators. The evaluation team will review programme specific and related documents, reports, reviews and other relevant information. It will convene a series of meetings with different tiers of national, provincial and district officials, donors, UN agencies, health service providers, LHS & LHWS, beneficiaries and other stakeholders to discuss key issues, challenges and strategic options for future. The evaluation team will carefully field test questionnaires, methodologies, and approaches proposed and will submit study protocols, questionnaires, and research reports to the steering committee for review and endorsement. The evaluation team should develop and implement mechanisms to ensure and document data quality and effective field supervision.
- Moreover, the evaluation team will analyze the results of household surveys such as PSLM, MICS, PDHS and others to examine, to the extent possible, the effectiveness of LHWS in improving performance on important indicators. The team will work closely with the M/o NHR&C, provincial and district governments/ DOH, and other stakeholders to ensure that the study provides the information needed to meet the objectives and assist decision making.
- Furthermore, it is required that the evaluation team will take account all key previous, new and emerging global, national and provincial policies, strategies and programmes of support. In particular, the team will take account of the focus on areas related to universal health coverage along with critical health system components. The evaluation team should also take account of wider analytical work on education, gender, governance, political economy, security, social exclusion etc. The firm/ organization will also need to review and understand current donors, UN agencies and public sector resources that support health, nutrition and population sector.
- The evaluation team will be required to provide a draft narrative report covering scope and objectives of the evaluation. The report should explain how activities are contributing to outputs and long term

outcomes of the Programme. The narrative report should include a comprehensive quantitative and qualitative analysis of strengths, weaknesses, achievements, constraints, value for money and lessons learnt during implementation and recommendations to improve performance in future. Some of the qualitative aspects of the Programme should be produced in a separate report containing case studies on different aspects of the Programme.

- The team should design and carry out the study in close coordination with UNICEF and M/o NHR&C, ensuring that the various components of the study relate to the objectives of the LHWP and take into account the standards and policies established by the LHWP. Evaluation team will carry out the dissemination activities agreed with the client so that the results of the study are widely available to stakeholders (organize with the Government and participate in at least one national and four provincial workshops). The evaluation team will ensure to minimize, to the extent possible, the disruption of services caused by the evaluation. The World Bank is currently also supporting an evaluation of the LHWP in Punjab Province. The evaluation team is advised to minimize duplication of activities and work in coordination with the WB evaluation team.

2.7. Evaluation Ethics

The evaluation team will maintain the highest standards of integrity, sensitivity, and confidentiality in dealing with study subjects and when examining medical records, to ensure that the dignity, human, and civil rights of people involved or affected by the study are respected. Overall, the 'Do no harm' principle would also be applied throughout, especially when working with respondents. Wherever children are involved in data collection, the evaluation team must use ethically sound, child sensitive methods when engaging with boys and girls. Accordingly, UNICEF's protocol on Ethical Standards in Research and Data Collection and UNEG's ethical standards for data collection and evaluation will be strictly observed by the evaluation team. These standards should be applied to the entire process of evaluation including training the evaluation field teams, mandatory written informed consent forms from the respondents to ensure complete anonymity and confidentiality throughout the evaluation process. In addition, complying to ethical standards would also include obtaining ethical clearance of the evaluation from the appropriate ethical review board (preferably Pakistan Health Research Council) under the Government of Pakistan.

2.8. Evaluation Management and Logistics

The Ministry will notify an Evaluation Steering Committee and a Technical Working Group, which will serve as the reference group of the evaluation to help assure quality and process for the evaluation.

UNICEF's Programme Monitoring, Evaluation and Reporting (PMER) section will be responsible for leading the evaluation process, with additional support from focal person (Director Program) from the M/o NHR&C and provincial health departments, and UNICEF programme staff in the provinces.

The selected evaluation team will be responsible for all aspects of the evaluation, including selection of enumerators, designing and refining the sampling strategy, adapting and designing data collection tools, coordinating data collection in the field (including trainings for enumerators), ensuring quality of data, including managing enumerators and proper administration of the survey tools, data entry, and analysing quantitative and qualitative data. The evaluation team will also be responsible for all logistics, including field movements, local accommodation, vehicles, security etc. However, field visits and data-collection will be facilitated by focal persons from the M/o NHR&C and provincial health departments, and UNICEF programme staff in the provinces. PMER will also assure the quality of field work through field observations.

The above mentioned focal persons will also help the evaluation team organize the interaction with

district stakeholders, including local communities and will extend all reasonable support necessary to facilitate activities uninterrupted, including the provision of all key documents, clear and unambiguous details of target communities with relevant stakeholders. Throughout the delivery of field activities, the evaluation team will remain in constant communication with UNICEF-supervisor and nominated focal persons, as identified in due course. They will ensure providing the M/o NHR&C and UNICEF Supervisor with brief monthly reports on the progress of the evaluation against the Gantt Chart to be proposed in the Inception report.

UNICEF will hire the evaluation team as per its standard business procedures. All logistic support to the firm/organization will be provided by the government under the leadership of UNICEF evaluation management team. The evaluation firm will follow security instruction of the UNICEF

2.9. Risks

The evaluation proposal should provide information on how the team foresees numerous potential risks and constraints which may affect the evaluation and accordingly mitigation measures should also be provided to ensure a robust evaluation process and outcome e.g. data quality, consistency and others. Risks such as Election in 2018 and Security risks should also be considered.

2.10. Presentation of data and report:

In preparing the results of the evaluation, the findings will be evidence-based and have clear references to respective sources. The structure and quality of the evaluation report must adhere to UNICEF/UNEG quality standards in producing a clear, succinct, high quality and user-friendly evaluation report reflecting comments received from various reviewers, stakeholders, and the client (where the authors disagree with the comments these could be placed in an annex); with different chapters for all provinces/areas; and presentations to share findings with stakeholders as per agreed schedule. The evaluation report may include the following report structure:

- Title page
- Table of contents
- Executive Summary, including the purpose of the evaluation, key findings, conclusions and recommendations in priority order (3-4 pages)
- Context including the overall country context on health
- Background of the LHW programme - including a description of project interventions, Theory of Change, key stakeholders and major achievements mentioned in progress reports
- Evaluation Purpose
- Evaluation objectives
- Scope of the evaluation
- Risks/Limitations and mitigation strategies
- Evaluation criteria and key questions
- Methodology
- Findings including:
 - Against the DAC criteria (both quantitative and qualitative aspects)
 - Provincial/area chapters
 - VfM analysis
 - Case studies (separate report)

- Lessons learned
- Conclusions and recommendations explicitly linked to the findings
- Action Matrix (recommendations linked to actions with timeframe and proposed stakeholders to take action)

The final report should follow the [UNICEF Evaluation Report Standards](#) and will be reported on UNICEF's global reporting system known as [GEROS](#). The selected evaluation team will receive these guidelines at the first meeting following issuance of the contract.

Soft copy of the tools, progress reports and tools should be shared electronically with focal point in M/o NHSR&C.

3. WORK ASSIGNMENTS, DELIVERABLES & PAYMENT SCHEDULE

TASK TO BE PERFORMED <i>(Indicate expected work to be performed.)</i>	DELIVERABLE(s) <i>(Specify final outputs.)</i>	WORK SCHEDULE <i>(month/period covered)</i>	TERMS OF PAYMENT
<p>Inception phase including the following tasks:</p> <ul style="list-style-type: none"> • Desk review of all key documents • Inception meetings with stakeholders to develop a deeper understanding of the programme components, implementation approaches, activities and stakeholders. The team should be able to travel to provincial sites, for scoping discussion with provincial teams to develop Theory of Change methodology. • Preparation of Theory of Change • Design of quantitative and qualitative methodology, tools and field plan 	<ol style="list-style-type: none"> 1. Draft inception report (as per UNICEF standards) submitted for review detailing evaluation design, methodology (quantitate and qualitative methods; survey and qualitative tools and guides, sample size of each category of interviewees; selection process and sampling technique; data collection strategy (work plan, duration, roles and responsibilities of team members (as against number of days per activity), field plan and risk mitigation plan, shared with UNICEF 2. Feedback received from the Evaluation steering/ technical committee incorporated, final inception report submitted to and endorsed by PMER 	08 weeks	<p>15 % on draft submission of draft inception report</p> <p>20 % on submission of final inception report</p>
<p>Field work phase including:</p> <p>Pretest tools translated into local languages (survey and interview questionnaires, FGD questions and tools) for given audience.</p>	<ol style="list-style-type: none"> 3. Quantitative and qualitative field work completed. 4. Data verification, cleaning and validation completed 5. Presentation to all key stakeholders on draft interim findings 	08 weeks	15% upon completion of field work and sharing of preliminary findings

Data analysis and draft evaluation report phase including: Analysis of data (quantitative and qualitative) completed; preparation of interim findings; briefings to UNICEF and key stakeholders on interim findings; preparation of draft report adhering to UNICEF quality standard.	6. Briefing to all key stakeholders on draft findings, conclusions and recommendations 7. Draft evaluation report submitted, reviewed by UNICEF, endorsed by PMER	08 weeks	20% on submission of first draft
Finalization of evaluation report including incorporation of all key stakeholders' feedback and finalization of evaluation report adhering to UNICEF/UNEG quality standards.	8. Feedback from UNICEF and all key stakeholders/ Steering Committee incorporated 9. Final evaluation report submitted; approved by PMER 10. Final dissemination session to present findings and lessons to all key stakeholders and wider audience	03 weeks 01 week	10 % 10 %

4. ESTIMATED DURATION OF CONTRACT

Start date: **August, 2018**

End date: **April, 2019**

5. QUALIFICATIONS OR SPECIALIZED KNOWLEDGE/EXPERIENCE REQUIRED

(Indicate skills and qualifications requirement):

The successful firm/organization will have the following qualifications and experience:

The proposed team should include the technical expertise and practical experience required to deliver the scope of work and outputs, in particular, with regard to:

- a) **Relevant subject matter knowledge and experience:** knowledge and experience in conducting evaluations and writing evaluation reports in health-related programmes.
- b) **Technical expertise:** proven experience (at least 15 years) in designing, managing and conducting large-scale and complex evaluations, baseline and end-line studies surveys and research studies in challenging project environments; experience of designing and conducting studies using experimental or quasi-experimental techniques and ability to manage data and information systems.
- c) **Qualifications:** the team should include sets of skills and expertise required to design, plan and conduct high quality evaluations (formative and summative, performance and impact) using quantitative and qualitative research methods. Bidders are required to provide samples of previous evaluations (reports etc.) and clearly identify and provide CVs for all those proposed as part of the team, clearly stating their roles and responsibilities. The team leader should be clearly mentioned with proven track record of evaluations.

- d) **Organisational experience:** bidders should provide evidence of previous project experience for the provision (design and implementation) of similar evaluations. Previous experience of working with the UN and/or any other international organization is desirable.
- e) **Country experience:** Bidders should have the experience of working with the government. They should be familiar with various provincial contexts. They should have regional/provincial teams on board who have ability to work effectively in all parts of the country, with enumerators who have the appropriate experience and language proficiency required to conduct the field work.
- f) **Reporting and communication:** excellent communication and written skills in English. A demonstrable high level of professionalism in communicating technical processes and an ability to write and present findings in accordance with UNICEF/UNEG standards.

6. TECHNICAL EVALUATION CRITERIA AND WEIGHT ALLOCATION BETWEEN TECHNICAL AND PRICE PROPOSAL

Technical 70% and Price 30%.

6.1. Technical Proposal (70%): Tender should be structured as per given details:

- The criteria for evaluation shall include:

Proposed Technical Criteria		
S. No.	Technical Evaluation Criteria	Max. Points
1	Overall Response (e.g. the understanding of the assignment and the alignment of the proposal with the ToR)	20
1.1	Completeness of response	10
1.2	Overall concord between RFP requirements and proposal	10
2	Company and Key Personnel	40
2.1	<i>Range and depth of organizational experience in evaluations (performance, impact, others) with similar projects in health sector</i>	10
2.2	<i>Specific work experience on evaluations in health sector under UNEG criteria with Government of Pakistan or UN agencies.</i>	10
2.3	<i>Key personnel's relevant experience and qualifications of the proposed team leader and other members in health and evaluations under UNEG criteria), report writing and facilitation skills)</i>	20
3	Proposed Methodology and Approach	40
3.1	Proposed methodology with details of evaluation methods, evaluation questions as per UNEG criteria, evaluation design matrix with indicators, details on sampling, approach and work plan for the tasks as per the ToR	25
3.2	Implementation strategies, participation of key stakeholders, quality control mechanisms	10
3.3	Innovative approach in addressing data gaps	5
TOTAL TECHNICAL SCORES		100
Minimum technical required score: 70		

6.2. **Financial Proposal (30%):** Tender should be structured as per given UNICEF Pakistan Supply Section template.

7. NATURE OF PENALTY CLAUSE TO BE STIPULATED IN CONTRACT:

(The clause provided in the contract should apply)

A maximum of 5%-10% deduction from pending contract fee if deliverables are unreasonably delayed.

Proposed Evaluation Matrix

The evaluation team is expected to prepare an evaluation matrix to be included in the inception report.

<i>Criteria</i>	<i>Evaluation Questions</i>	<i>Data sources</i>	<i>Data collection methods</i>	<i>Data collection tools</i>	<i>Baseline data if (available)</i>	<i>Data Analysis Method</i>
Relevance						
<i>Efficiency</i>						
<i>Effectiveness</i>						
<i>Sustainability</i>						
<i>Outcomes</i>						

Annex B ToC analysis

B.1 Introduction

This annex sets out the approach to formulation and analysis of the ToC that is proposed for the LHW Evaluation. It is structured as follows. Section B.2 explains the role of a ToC in an evaluation. Section B.3 discusses issues for the appropriate formulation of a ToC for the LHP. Section B.4 introduces the Realist Evaluation approach, makes a case for its appropriateness for this Evaluation, and discusses examples of the formulation of theories of change for programmes similar to the LHW that are informed by a Realist perspective. Based on this review, section B.5 sets out the specific formulation of the ToC that is proposed to be used for this Evaluation, and outlines how the validity of this ToC will be tested.

B.2 Role of the ToC in the Evaluation

Rogers (2014, p. 1) in a paper providing methodological guidance for UNICEF on Theories of Change (ToCs) states that:

A ‘theory of change’ explains how activities are understood to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a programme, a policy, a strategy or an organization.

She also notes (p. 6) that:

A theory of change can support an impact evaluation in several ways. It can identify:

- *specific evaluation questions, especially in relation to those elements of the theory of change for which there is no substantive evidence yet*
- *relevant variables that should be included in data collection*
- *intermediate outcomes that can be used as markers of success in situations where the impacts of interest will not occur during the time frame of the evaluation*
- *aspects of implementation that should be examined*
- *potentially relevant contextual factors that should be addressed in data collection and in analysis, to look for patterns.*

A good theory of change explains how a programme or intervention is understood to work... An impact evaluation can check for success along the causal chain and, if necessary, examine these alternative causal paths... In cases of implementation failure, it is reasonable to recommend actions to improve the quality of implementation; in cases of theory failure, it is necessary to rethink the whole strategy for achieving impacts.

The LHW Evaluation proposes to build on these insights in several ways:

-
- First, we would regard a ToC as useful for a broader range of evaluations (including performance and process evaluations) in addition to impact evaluations.
 - Second, as a ToC is a statement of the intended causal links between what an intervention is intended to do, and the results it is intended to achieve, it needs to identify the key conditions or assumptions under which each element of the causal chain (or more generally, the causal chains for each type of intervention in the programme) can be expected to hold.
 - Third, to be useful for evaluation purposes, a ToC needs to be testable, i.e. it should be used to derive propositions about whether causal links are holding in implementation, and whether specific assumptions are valid, either *ex ante* (so that the design is consistent with available evidence) or *ex post* (that they actually holding during implementation).

As Rogers also notes, ideally, a well-formulated ToC will have been produced as part of the intervention design which can be tested in the Evaluation. However, often a ToC has not been produced at all, or what has been produced may not fully reflect actual implementation. In this case, it is likely to be necessary, as part of the evaluation process, to develop an improved formulation of the ToC that is implicit in implementation, and to use this implicit or constructed ToC as the basis for the Evaluation.

Where an implicit or improved version of the ToC has been developed as part of the Evaluation process, it is important to maintain a distinction in the Evaluation between this version (the constructed ToC), and the ToC (or equivalent) as it was explicitly formulated and used by the programme. So, the answer to the EQ 'To what extent did the programme have a valid and well-formulated ToC?' may identify weaknesses in the formulation of the programme ToC (such as missing assumptions), but the key assumptions actually tested in the Evaluation may be those derived from the implicit/improved version developed for the Evaluation.

Box A.1 below presents an assessment framework for the analysis of theories of change in evaluations. A feature of this is that it focuses not just on the validity of the ToC, but on how clearly this was formulated and how effectively it was used as a management tool in a programme. This assessment framework has been used to inform the selection of EQs in particular in relation to programme management (under the category of Efficiency).

- 1. Clear analysis of the context and wider change process sought**
 - a. Is the theory of change based on a contextual analysis and assessment of evidence?
 - b. Is it specified how changes are expected to occur as a result of the intervention and the role of other actors, and the context?
- 2. Clearly articulated vision of change and process of change sought**
 - a. Is the vision conceptually clear and specific?
 - b. Is the change process conceptually clear and logical, but also reflects causal complexity?
 - c. Are the hypothetical causal pathways mapped, with no missing links, specific to the programme in its context, and not a generic response?
- 3. Assumptions are explicitly formulated and linked to specific cause-effect links**
 - a. Have the assumptions been made explicit in relation to: specific causal links; how change is understood to happen; the enabling and constraining factors; and the context?
 - b. Is there an analysis of the interests and influence of stakeholders, and the assumptions about stakeholder behaviour for the theory of change?
 - c. Does the narrative describe key 'pathways' (i.e. the hypothetical sequences of change, sometimes called results or outcomes chains)?
 - d. Does the programme make explicit its 'drivers of change' (i.e. how its interventions interact with the context to achieve change)?
 - e. Are the strategic options described in relation to the drivers of change?
- 4. Effective use of external learning and evidence for drivers of change and cause-effect links**
 - a. Is there a narrative assessment of learning/evidence for key assumptions and change pathways, including an assessment of the quality of evidence?
 - b. Are areas where evidence is relatively weak flagged?
 - c. Is the assessment consistent with the sources used?
- 5. Clear documentation, effective communication, and wide ownership**
 - a. Are changes in the theory of change captured, documented, and communicated?
 - b. Is there understanding and ownership of the theory of change among those responsible for implementation?
- 6. Active use of ToC in planning, monitoring and evaluation, and management processes**
 - a. Is the ToC used in strategic planning, and in monitoring and evaluation?
 - b. Does monitoring and evaluation focus on testing key assumptions, especially where evidence is weak?
 - c. Are regular reviews and revision of the theory of change integrated into management processes?
- 7. Explicit focus on gender, poverty, and exclusion**
 - a. Is the theory of change explicit about how the intervention will benefit target beneficiaries?
 - b. Is the theory of change informed by analysis of gender, poverty, and exclusion?
 - c. Is the theory of change informed of analysis by the political context?

B.3 ToC and the LHWP

B.3.1 ToC in the Evaluation ToR

Section 1.5 of the Evaluation ToR suggests the following approach to the development and analysis of the ToC in the LHWP Evaluation:

Generally, Theory of Change (ToC) approach is not used in preparation of the project proposals (PC-1s) of the Government of Pakistan. However, currently many PC-1s (including common PC-1 of the LHWP before devolution) are using logical framework approach. Also, after devolution, some integrated PC-1s were produced by the provincial DOH, which include logical frameworks, which could support devising an adequate Theory of Change for the evaluation. Previous evaluations also tried to develop a pathway of change in order to assess the programme, however, these attempts do not suffice as a TOC for the current programme that has significantly changed from its earlier version. Moreover, since devolution, the scope of work of the LHW programme has changed significantly as provincial governments have developed their own mechanisms to implement the programme. Therefore, it is possible that there are different ToCs at work within various provinces. The selected evaluation team will have to carefully review all documents, interview all key stakeholders in all the provinces to capture the provincial variations, if any. In consultation with all key stakeholders, in the inception phase, the selected evaluation team will be required to formulate or re-construct a ToC for the programme and will have to present the same to the evaluation steering committee and reference group for endorsement.

This section assesses how far it is possible to develop a ToC for the LHWP using an approach that in particular reviews the last major evaluation and evidence on differences in provincial implementation approaches, including from PC-1s.

B.3.2 LHWP ToC in the Fourth Evaluation

The Fourth Evaluation of the LHWP (OPM, 2009) did not explicitly articulate or test a ToC. However, the aspects of the LHWP on which the Fourth Evaluation focused does incorporate an implicit view about the factors influencing LHWP performance, as shown in Figure 22 below, which is developed from the discussion in Chapter 2 of OPM (2009).

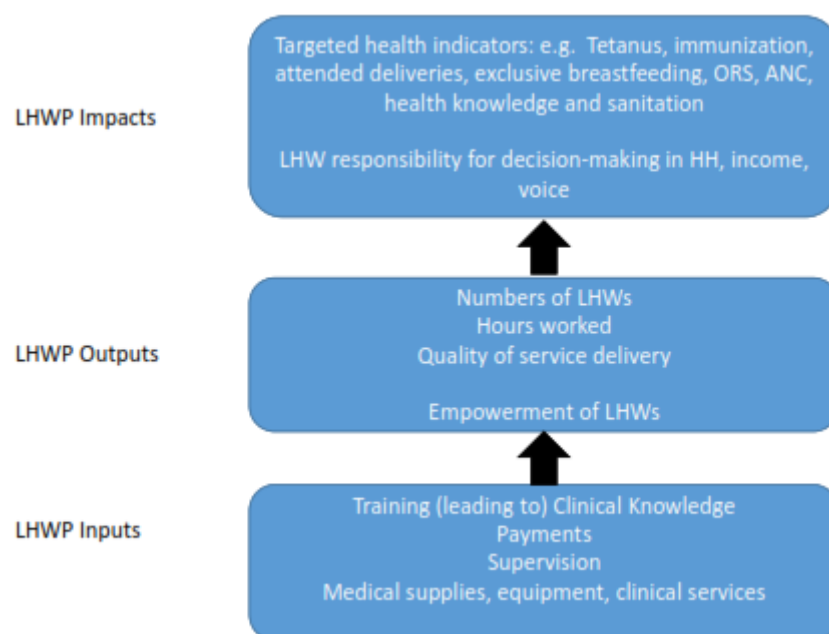
LHWP inputs included training, payments, medical supplies, equipment and clinical services, and supervision. LHW clinical knowledge was treated as a programme Input (though it may more appropriately be regarded as an Output created in part by the training provided – Outputs were defined as the number of LHWs, the hours they worked, and the specific roles they played in relation to preventive and promotive healthcare and curative consultations). The Fourth Evaluation examined factors explaining the performance of LHWs.

No Outcomes from the LHWP were defined, but 'Impact' was specified in relation to the main target health indicators, including TT coverage, attended deliveries, immunisation, exclusive breast feeding, knowledge among mothers of the preparation of oral rehydration solution, and attendance at antenatal consultation.

The Fourth Evaluation report provided evidence on how input supply (for instance, supervision) affected LHW performance and hence impacts achieved. It also provided evidence on the extent to which LHWs received benefits from employment, in particular in terms of empowerment.

In summary, the Fourth Evaluation identified the main causal factors likely to influence LHW performance and lead to the achievement of results, but without fully articulating these mechanisms, particularly in a testable form.

Figure 22 Implicit LHW intervention logic from Fourth Evaluation



Source: Derived from OPM (2009).

B.3.3 The LHWP in the provinces

Since 2011, following the 18th Amendment to the Constitution, implementation of the LHWP, along with other public health functions, has been devolved to the provinces. Provinces have been able to make changes to the roles and management arrangements for LHWs, as well as the level of funding support provided to the programme. As a result, there has been a divergence over time between the ways in which the LHWP has been implemented in different provinces. Indeed, it may no longer be appropriate to conceive of there as being a single LHWP, but rather a set of provincial programmes. As noted below, in both KP and Punjab, LHWs have been integrated into broader sectoral programmes. In Sindh and Balochistan, the LHWP continues largely as it was implemented before devolution, but with some (relatively limited) changes in LHW functions. Funding arrangements (in terms of what parts of LHWP costs are funded from the development budget) also vary between provinces. Differences in LHWP and management arrangements were discussed in the first Technical Working Group meeting for the Evaluation.

In two provinces, a PC-1 document has been produced for the LHWP, which provides information on how the programme is envisaged as functioning in relation to sector objectives.

In KP, the LHWP is conceived of as:

support and extension of the district health system and therefore will ultimately be devolved to the district health system. However during the interim phase till the capacity of the district health systems evolves to the level where they can provide effective implementation of the programme, the Health Department Khyber Pakhtunkhwa shall continue to provide management support to the provincial and district levels of the Program in addition to its main role of policy formulation, monitoring and quality assurance of service provision. The PC-1 is designed for the interim period where the focus shall be on improving the capacities both at the district and provincial level to manage and implement the program. (KP PC-1, p.8)

In Punjab, LHWs are part of a broader IRMNCH and Nutrition Program, with funding for the non-salary component of LHWP. The PC-1 document notes (pp. 13–14) that research has identified multiple gaps in MNCH, RH, and nutrition services and so services provided by both LHWs and CMWs are being enhanced, including strengthening networking between LHWs and CMWs. The document defines 16 PHC services to be provided by LHWs, including working as a frontline community workforce for all vertical programmes.

The two PC-1s emphasise broadly the same set of factors as influencing LHWP performance as in the Fourth Evaluation, but also do not articulate the LHWP's intervention logic in a clear or comprehensive way.

B.3.4 Reflections and implications for evaluating LHWP

The reviews of the PC-1s and other information about implementation of the LHWP in the four provinces following devolution suggests that there are differences in:

- the role that the LHWP is seen as playing in achieving RMNCH objectives, in relation to other programmes and initiatives;
- the management and implementation arrangements for the LHWP, as well as the level of funding provided; and
- the functions that LHWs are being asked to perform.

However, there do not appear to be significant changes over time, or differences between provinces, in the key factors that are highlighted as affecting LHW performance, and hence in the core intervention logic of the LHWP.

These considerations suggest the following approach to development of the ToC for the LHWP to be used in the Evaluation:

- First, since other programmes, policies, or initiatives may contribute to achieving the RMNCH objectives that are specified as the LHWP objectives, it will be important to set out the wider intervention logic (including the relationship between different contributing programmes) by which each province is intending

to achieve RMNCH objectives. This goes beyond the ToC for the LHWP itself, but is important for understanding the role of the LHWP within each province's wider health policies and programmes. This will be done as part of the Provincial Reviews that will be carried out as part of this Evaluation.

- Second, it will be important to articulate the common core of the intervention logic of the LHWP that still applies across all provinces, with a view to making comparisons of how differences in the context, management, and funding arrangements, and specific roles and tasks of LHWs have affected performance and results achieved. As a result, while (as suggested above) there will be theories of change developed for each province in relation to achievement of wider RMNCH objectives, a common summary LHW ToC will be applied across all the provinces, rather than a separate ToC being developed for each province.

Previous evaluations have provided robust evidence that the LHWP can and has worked in delivering its objectives, but that the programme's performance has varied under different circumstances. For instance, the Fourth Evaluation concluded that there was robust empirical evidence that:

LHWP has had a positive impact particularly in relation to family planning and antenatal care... On the other hand, the impact on health knowledge and sanitation has been weak... In general the analysis found that effects were larger for poorer households, especially in relation to maternal and neo-natal health practices, immunisation and growth monitoring. However, knowledge-based interventions, such as treatment of diarrhoeal diseases, were more effective among better-off households. The same applies for some more demand-driven services, such as family planning. (OPM, 2009, pp. 6–7)

The Fourth Evaluation also found that while the mean LHW performance score had increased in all provinces since the Third Evaluation, there remained a substantial group of under-performing LHWs. The Fourth Evaluation identified three types of factors that influenced LHW performance (OPM, 2009 p. 7):

- LHW-specific factors – experience, hours worked, training and supervision received;
- district-level factors – the proportion of time the Executive District Officer-Health spends working on LHWP and the total number of LHWs working in the district; and
- community factors – such as the existence of women's health committees.

The Fourth Evaluation also found that several factors expected to be determinants of LHW performance were not in fact determinants; this included whether LHWs had another paid job, whether LHWs were resident in the areas they served, drug availability, access to vehicles for LHSs, and the knowledge score of the LHW.

Since the Fourth Evaluation, the devolution of the LHWP has introduced a further dimension of potential difference between LHW performance, based on differences in provincial policies, management, and programme funding decisions.

The primary Effectiveness EQ proposed in the Evaluation ToR (section 2.5.2) is 'To what extent has the programme achieved its objectives/outcomes and what were the

major factors influencing the achievement or non-achievement of the objectives/outcomes?’

The appropriate approach to answering this question will require understanding how differences in contextual factors and policy decisions (especially at provincial level) have affected the performance of a programme whose core intervention logic is known from past evaluations to be sound.

This requires that the Evaluation should, in addition to assessing the extent to which LHWP objectives have been achieved, explicitly address the questions of ‘To what extent does the LHWP work, for whom, in what respects, to what extent, and how?’ This comparative and explanatory focus will highlight differences in performance and factors that may explain them, as the basis for developing recommendations for improved programme performance. Realist Evaluation is an approach that has been developed to answer this type of question, and it is therefore proposed that a Realist Evaluation perspective should be applied for this Evaluation. Realist Evaluation has a particular approach to the formulation and testing of ToCs, which is explained in the following section.

B.4 A Realist Evaluation approach and ToC

B.4.1 Main elements of the Realist Evaluation approach

Adams, Sedalia, McNab and Sarker (2016) note that:

The growing field of implementation research investigates the programme execution with the understanding that successful transferability of programme models requires insight on how an intervention actually works and the theories that drive it (Chen and Rossi 1983; Bourguignon et al. 2007). Unlike traditional impact evaluation approaches that establish whether change in outcomes can be directly attributed to an intervention (Astbury and Leeuw 2010), realist evaluation focuses on the processes and contexts of implementation that yield impact (Pawson and Manzano-Santaella 2012). By examining ‘what works, for whom and why’ (Pawson and Tilley 1997), insights are gained about the interactions between interventions, communities, implementers and health systems that make programmes more or less successful.

A Realist Evaluation approach has been widely applied in evaluating public health interventions, and particularly for community health worker programmes that are similar to LHWP.

Realist Evaluation is based on a particular understanding of causality, one which emphasises that whether or not an intervention works depends on whether or not actors make particular decisions in response to the intervention. What causes the outcome of the intervention is the reasoning of actors in response to the resources, incentives, and opportunities that it provides. How and when this causal response occurs will be influenced by underlying social and psychological factors, as well as by features of the context of implementation.

Realist Evaluation approaches the ToC for an intervention through the concept of ‘programme theory’:

*The programme theory describes how the intervention is expected to lead to its effects and in which conditions it should do so. The initial programme theory may be based on previous research, knowledge, experience, and the assumptions of the intervention designers about how the intervention will work. The difference between realist and other kinds of programme theory-based evaluation approaches is that a realist programme theory specifies what mechanisms will generate the outcomes and what features of the context will affect whether or not those mechanisms operate. Ideally, these elements (mechanisms, outcome, context) are made explicit at the evaluation design stage, as it enables to design the data collection to focus on testing the different elements of the programme theory.*⁶⁹

The approach for testing a programme theory may use many different methods, but the core of it involves formulating and testing a set of 'context-mechanism-outcome' (CMO) statements that take this general form: 'In this context, that particular mechanism fired for these actors, generating those outcomes. In that context, this other mechanism fired, generating these different outcomes.'

Realist Evaluation focuses explicitly on contributing to understanding what may explain differences in programme performance in different contexts:

*Because realist evaluation uses the idea of generative causality (i.e. mechanisms only fire when the context is conducive), realists are modest in their claims, stating that an evaluation cannot produce universally applicable findings. At best, evaluation can make sense of the complex processes underlying programmes by formulating plausible explanations ex-post. It can indicate the conditions in which the intervention works (or not) and how they do so. This realistic specification allows decision makers to assess whether interventions that proved successful in one setting may be so in another setting, and assists programme planners in adapting interventions to suit specific contexts.*⁷⁰

B.4.2 Issues in applying a Realist Evaluation approach for the LHWP

As suggested above, a Realist Evaluation approach is in principle an appropriate one where one of the most important questions for the Evaluation relates to understanding differences in programme success in different contexts. Realist Evaluation also has a strong emphasis on understanding behaviour change, and has been widely used for the evaluation of Community Health Worker programmes, as shown by the examples in the following section. Realist evaluation methodology is, however, still developing, and there is a lack of commonly accepted quality standards and guidance for implementing the approach, including for the interpreting and defining CMO. The typical implementation approach for Realist Evaluation has involved a deep and time-consuming iterative approach to CMO development and testing as part of a process of understanding behavioural mechanisms and contextual factors influencing public health programme success. Obtaining sufficient evidence to draw robust conclusions in testing CMOs can also be challenging.

The constraints of time and resources for this Evaluation mean that a feasible approach can involve applying a Realist perspective to the evaluation design (with a

⁶⁹ www.betterevaluation.org/en/approach/realist_evaluation. Accessed 30 January 2019.

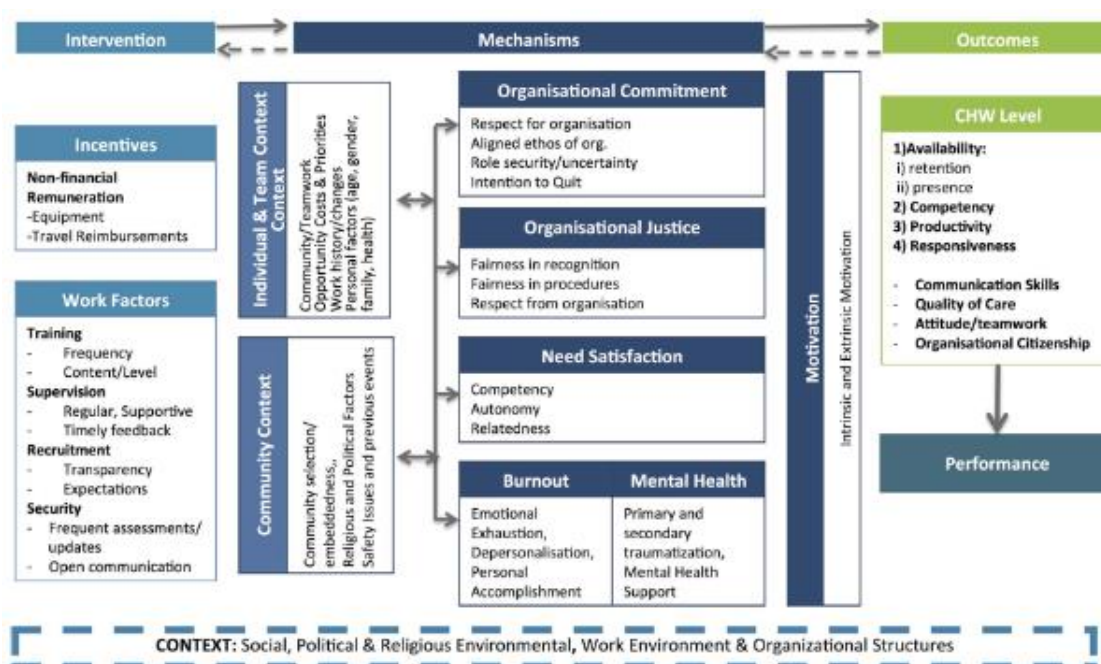
⁷⁰ Ibid.

principal focus on understanding factors influencing variation in performance), rather than applying a full Realist Evaluation protocol including the iterative development of CMOs. This approach can therefore be regarded as somewhat methodologically innovative, in that it seeks to use and develop insights from the Realist Evaluation approach within these constraints.

B.4.3 Examples of Programme Theory for community health worker and similar programmes

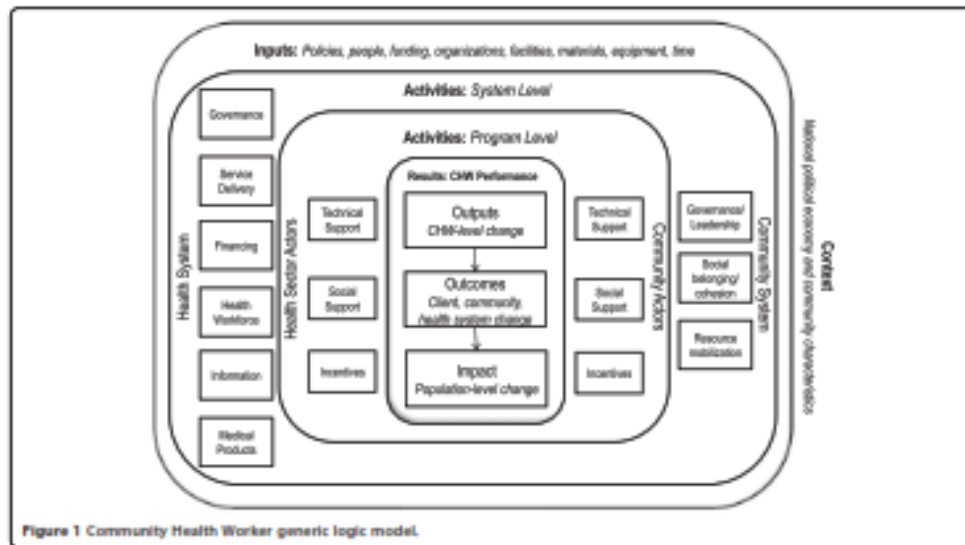
This section provides examples of various formulations of Programme Theory for community health worker and similar initiatives. It shows that these can take various forms. Figure 23 shows a representation of factors potentially influencing community health worker performance in the context of humanitarian emergencies, based on a review of literature and initial interviews, and noting the existence of bi-directional causality.

Figure 23 Initial Programme Theory for community health worker performance in humanitarian emergencies



Source: Gilmore *et al.* 2016.

Figure 24 Generic logic model for community health workers



Source: Naimoli *et al.* 2014.

Figure 24 presents a more general representation of potential factors affecting community health worker performance, while Figure 25 provides a logframe based representation of Pakistan's CMW programme.

Figure 25 Logic model of Pakistan's CMW programme

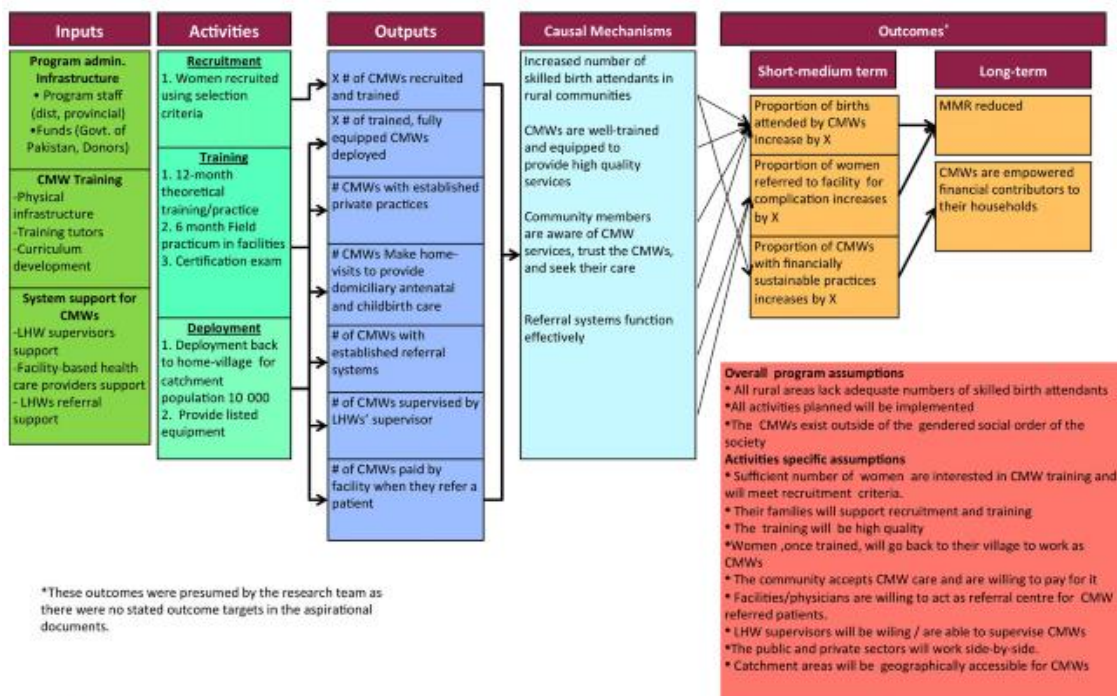


Figure 1. Logic model of Pakistan's CMW programme.

Source: Mumtaz *et al.* 2014.

Figure 26 Programme Theory for community health workers in Bangladesh

Box 2. Developing programme theory for CHWs

The problem

Despite considerable progress in MNH intervention coverage over the last decade, the use of formal MNH services in rural Bangladesh remains sub-optimal. According to data from the 2011 Bangladesh Demographic and Health Survey, only one-quarter of women receive four or more antenatal care visits, and a medically trained provider attends one-third of births. Contextual factors such as weak referral networks, lack of trust in the formal health care system, financial consequences of care seeking, and widespread and persistent misconceptions regarding maternal and newborn care practices hinder optimal MNH. These contextual and financial barriers are even more pronounced among the ultra-poor, and those living in hard-to-reach areas where distance to services and cultural barriers are pronounced. In general, functional systems of routine identification of pregnancy and danger signs, and referral are not in place. Government community-health workers charged with these tasks may lack the necessary skill set and supervision to provide them and thus have relied on NGOs and UN agencies for support to provide these services.

The programme theory to address the problem

Bangladesh has had a long and successful experience with local field-level health workers disseminating key health messages (e.g. family planning, oral rehydration therapy). In keeping with this tradition, UNICEF is working with partner NGOs to support the development of a cadre of locally recruited CHWs whose role it is to raise MNH awareness by means of house-to-house visits and community mobilization.

CHWs promote increased MNH coverage by visiting women in their homes, and delivering health messages around MNH. These messages help empower women to seek health services at the time of delivery. CHWs are motivated to fill this role by means of training and supportive supervision. Further, women's reluctance and distrust of facilities will dissipate because of trust in her CHW, and the social support she provides.

Source: Adams *et al.* 2015.

Figure 26 presents a Programme Theory for community health workers in Bangladesh in the form of an explanation of how the community health workers are supposed to be effective in increasing MNH coverage.

Figure 27 Theories relevant to understanding community health worker volunteer motivation and work behaviour

Table 1 Selected theories relevant to volunteer motivation and work behaviour in humanitarian organisations		
Theory	Assumptions	Interventions informed by the theory
Crowding theory ⁵³	Extrinsic goals coming from outside the self, including salaries, can crowd out intrinsic motivation	Appropriate incentives: align context-specific expectations of community health workers, programme managers, and policymakers for low attrition and high performance to be achieved
Intrinsic motivation theory ⁵⁴	People choose humanitarian aid work not because it provides them with material extrinsic rewards, but because it creates immaterial intrinsic rewards	Compensate for humanitarian aid work with non-financial incentives
SDT ^{17–51}	Conditions supporting the individual's experience of <i>autonomy</i> , <i>competence</i> and <i>relatedness</i> foster the most volitional and high quality forms of motivation and engagement for activities	<ul style="list-style-type: none"> ▶ Match the task to the volunteer's functional motives ▶ Allow the volunteer to participate in the development of a programme ▶ Provide supportive supervision ▶ Allow interdependence among employees and identification with work groups ▶ Provide in-kind rewards, appropriate material and task support ▶ Bundles of incentives ▶ Investment in support
Gift exchange and high-performance HRM theory ⁵⁵	Retention and performance will be higher and turnover lower in organisations with comparatively high investment in, and care for, employees	
Consistency theory ⁵⁶	Practices need to be consistent for high retention and performance	<ul style="list-style-type: none"> ▶ Internal consistency (among different HRM practices) ▶ Contextual consistency (between HRM practices and organisational context)
Organisational commitment ⁵⁷	Organisational commitment contributes to better job-related attitudes, higher job satisfaction and better organisational performance. The type of organisational commitment that encompasses accepting the organisational goals, being committed to the organisation, and feeling engaged with and attached to the organisation appears to be facilitated by autonomous motivation (link with SDT theories)	Institute practices that facilitate positive psychological links between organisational and employee goals
Social exchange theory ⁵⁸	HRM practices influence the employees' perceptions of organisational support, which in turn induce positive work attitudes and behaviours based on the norm of reciprocity	Practices such as career development opportunities, investment in training, etc, signal the organisation's commitment to the employees
The functional approach ⁵⁹	When volunteers' important motivations for service are paired with features of the environment that allow them to actualise these motivations, then volunteers will be more satisfied and more likely to continue volunteering in the future	<ul style="list-style-type: none"> ▶ Appropriate incentives ▶ Match the volunteers' functional motives to the activities that they are asked to perform

HRM, Human Resource Management; SDT, self-determination theory.

Source: Vareilles *et al.* 2015.

These examples show that there is considerable variation in how the Programme Theory for programmes similar to the LHWP has been developed in the literature. The appropriate form of representation should depend on the nature of the evaluative exercise. In this particular case, much about the operation of LHWs and what makes them effective is well understood as a result of previous evaluations and research. The main challenge is to understand how devolution, regularisation, and differences in provincial approaches to the role (and potentially the resourcing) of LHWs has affected their performance.

B.5 Applying a Realist Evaluation perspective to the LHWP

B.5.1 Developing a Programme Theory and CMOs

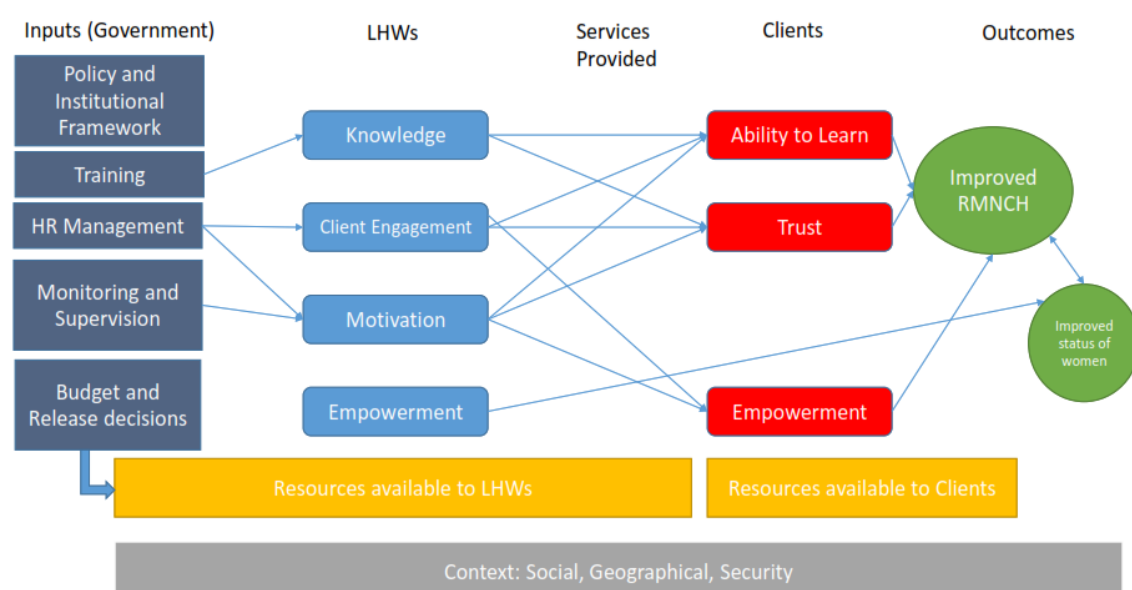
The intention of the formulation of the Programme Theory is to capture the key features of how the LHW is intended to work to achieve a range of RMNCH objectives. This has been based on common features of the programme across provinces, and developed by drawing on perspectives from the Fourth Evaluation. The proposed formulation of the Programme Theory is the following:

Lady Health Workers, appropriately selected, trained, supervised, and equipped, provide promotive, preventive and curative healthcare to individual clients and families (especially women and children) and communities to achieve improved RMNCH and nutrition outcomes. They act as agents of change in communities by organising health committees and women's groups. They bridge the gap between families and the primary healthcare delivery system, through referring clients to PHC services. They are themselves empowered by their role and experience, and empower women in their communities to obtain appropriate RMNCH and related services.

The validity of this Programme Theory will be tested in the Evaluation through the formulation of CMO statements that capture the key causal relationships underlying the Programme Theory and the collection of evidence to determine to what extent and in what contexts these causal relationships have held.

The initial formulation of the CMOs was based on the mechanisms identified in the wider literature on Realist Evaluation of community health worker programmes (e.g. in section B.4.3), the Review of Literature on international community health worker experience that has been carried out using a Realist Evaluation perspective, and the review of earlier evaluations of, and research on, the LHWP in Pakistan.

Figure 28 Proposed representation of the LHW ToC



This review has led to the initial proposed formulation of the LHW ToC that is set out in Figure 28. This emphasises three types of ‘mechanism’ by which LHWs can be effective in bringing about behaviour change in their clients and the communities that they work with, and in achieving results:

- Knowledge: the ability of LHWs to provide relevant and accurate knowledge to address health issues;
- Client engagement: the ability of LHWs to communicate and work effectively with clients and communities; and
- Motivation: the willingness of LHWs to work effectively.

In addition, there is a mechanism of ‘Empowerment’ by which LHWs may improve their lives and status.

Inputs provided (mainly by government) affect the extent to which these mechanisms will be effective, distinguishing between management, supervision, and training support, and the provision of resources (medicines, materials) to LHWs. In addition, the wider context (social, geographic, security among other factors) will influence the effectiveness of LHWs.

In addition, the extent to which clients are able to make effective use of the knowledge and resources supplied by LHWs will depend on client-specific factors, including their ability to learn, their trust in LHWs, and the extent to which they feel empowered to improve their own lives. These factors will also depend on the resources available to clients and communities, and the context within which they live.

The behaviour of LHWs, and the induced behaviour of their clients will lead to outcomes in terms of improved RMNCH service use (and improved status for women), and ultimately to improved health outcomes.

B.5.2 Testing the Programme Theory

The next step in the Evaluation process will be to formulate specific CMO statements that will be tested through the various ERAs that will be conducted as part of the Evaluation, whose methodology is set out in the Inception Report. A particular focus of this testing will be to understand how differences in context, and in particular in management and resourcing decisions for LHWs between provinces, have affected the performance of LHWs. The quantitative data analysis should identify potential problems in implementation (e.g. areas or social groups for whom there is lagging performance on RMNCH variables), which may be related to specific contextual or policy features (particularly policy and financing differences related to the LHWP between provinces). The qualitative data collection and analysis will play an important role in testing CMOs, through helping to understand in particular how LHWs and clients in communities perceive the programme and factors affecting performance.

Annex C List of interviewees for ERA3

Punjab

KIIs with IRMNCH program team	
Name	Designation
Mr Akhtar Rasheed	External Consultant
Mr Naeem Majeed	Additional Program Director
Mr Usman Sajid	Finance Officer
Ms Nadia Kiran	MIS Analyst
Mr Zafar Ikram	Former MNCH Provincial Coordinator
Ms Sabiha Khursheed	Former Provincial Coordinator LHW Punjab

KIIs with government stakeholders
Secretary Health
Secretary P&D
Additional Finance Officer
Chief Health P&D
Member Health P&D

FGD participant name	Organisation
Ms Shakeela Zaman	Head of Public Health Department, UHS
Ms Shabnum Sarfraz	Former CEO PPHA
Mr Jamshaid Ahmed	World Health Organization
Mr Iftikhar Ahmed Ghuman	Ex-DHO Lahore
KIIS	
Ms Farah Sabih	World Health Organization
Ms Bakir Jafri	World Health Organization
Mr Adnan	Research and Development Solutions
Mr Moazzam Khalil	Development Strategies Pakistan

Sindh

Sindh Lady Health Worker Program Team

Designation
Project Director
Additional Program Director
Deputy Provincial Coordinator
Deputy Provincial Coordinator
Field Program Officer
Field Program Officer
MIS Coordinator
Accounts Officer

KIIs:

Designation
Secretary Health
Secretary P&D
Secretary Finance
Former PD for LHWP Sindh
Director AKU
PD MNCH Sindh
Director PPHI

FGD participants:

Name	Organisation
Ms Farina Abrejo	AKU
Mr Daleep Kumar	USAID
Mr Shabir Chandio	USAID
Mr Naveed Bhutto	Nutrition International
Ms Alyia	Pathfinder
Ms Sadaf	Marie Stopes
Ms Wajeeha	Pathfinder
Ms Shahzia Bano	Aman Foundation

KP

Group Discussion Participants:

IHP Director
Deputy Program Director
MIS Coordinator
Financial Analyst
FMO
MNCH Public Health Specialist

KIIs:

Director Health Sector Reform Unit
Director District Health Information System
Sec P&D KP

Chief Health P&D

FGD participants:

Name	Organisation
Mr Sami Siraj	Khyber Medical University Peshawar
Mr Muhammad Abbas Khan	Global Health Supply Chain
Mr Muhammad Rashid Saleem	Nutritional International
Dr Mazhar	World Health Organization
Mr Naseer	World Health Organization
Mr Zahoor Jan	Association for Community Development
Mr Mushtaq Ahmad	Association for Community Development

Balochistan**KII and FGD participants:**

S. No	Name	Designation
1	Dr Chakar Riaz	Deputy Provincial Coordinator
2	Mir Nasar Ullah Khan	Field Program Officer
3	Shakeel Ahmad	Cashier
4	Muhammad Hamid	MIS Coordinator
5	M. Khan Zehri	Logistics Officer
6	Fahad Bulaidi	FPO
7	Abdullah Sherani	Health Education Officer
8	Qasim Khan	Superintendent
9	Bakhat Nasar Kasi	Data Analyst
10	Dr Javed	FPO

FGD participants:

Name	Organisation
Dr Asfand	World Health Organization

Dr Farooq Azam	USAID
Dr Rasheed	United Nations Population Fund
Hassan Hasrat	SCAP
Sharf Zehri	PAO
Adnan Victor	Hands.org
Shamim Ahmad	Admin Officer SCAP
Ratan Kumar	Finance Manager SCAP

KII Interviews:

Name	Designation
Mr Asad Kakar	Additional Secretary Health
Mr Lal Jan	Additional Secretary Finance
Mr Ahmed Ayaz Jaffar	Secretary P&D
Hafiz Qasim	Chief Health P&D

AJK

AJK Lady Health Worker Program Team

Name	Designation
Mr Ali Asghar	Project Director
Mr Khwaja Maqsood	Additional Program Director
Mr Umer Ishtiaq	MIS Analyst
Mr Sabir Abbasi	Finance Officer

KIIs:

Secretary Health
Secretary P&D
Additional Secretary Finance
Director MNCH
Director EPI
Chief Health P&D
Director PWD

FGD Participant:

Name	Organization
Mr Yaqoob	WFP
Mr Shahzad Ahmed	FPAP
Ms Yasmin Abdullah	FPAP
Ms Rozina Shafeeq	Islamic Relief
Ms Salma Gillani	LHW Union Representative
Ms Hafisa Qudsia	LHW Union Representative
Mr Yasir	Independent researcher

GB

FGD participants:

	Name	Organisation
1	Gul Anar Khan	Agha Khan Health Services Pakistan
2	Hurraan Pari	District Coordinator AKRSP
3	Dr Fareed	Ms of FPAP Hospital
4	Dr Shamsheer Ali	UNICEF
5	Dr Shorab	Area Coordinator World Health Organization

Group discussion / KII participants from programme team:

	Name	Designation
1	Dr Mumtaz	Deputy Provincial Coordinator
2	Rasheed Ahmad	Admin Officer
3	Qasim Shah	Finance Officer
4	Rehman Ahmad	Budget Officer
5	Mr Tariq	Logistics Officer
6	Manzoor Karim	MIS Coordinator
7	Dr Saleem	Project Coordinator

KII interviews:

	Name	Designation
1	Mr Rasheed Khan	Secretary Health GB
2	Mr Saleem Ranjha	Secretary Finance GB
3	Mr Saeed Ibrar	Secretary P&D GB

ICT

1. FGD participants:

S. No	Name	Designation
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1	Dr Farah Sabih	NPO World Health Organization, Islamabad
2	Dr Bakir Jafri	Consultant World Health Organization, Islamabad
3	Dr Qudsia Uzma	NPO World Health Organization, Islamabad
S. No	Name	Designation
1	Dr Moazum Khalil	Development Strategies Pakistan
2	Dr Adnan	Research and development solutions

2. FGD / KII participants from ICT programme team:

	Name	Designation
1	Dr Najeeb Durrani	DHO ICT
2	Ms Balqees Alam	ADC / LHS
3	Mr Sheeda Mohammad	Data Analyst
4	Mr Imtiaz Ahmad	Accounts Officer

KII interviews:

	Name	Designation
1	Mr Mohammad Safi	Former Director Programmes, Ministry of Health
2	Dr Waheed Lashari	Assistant Director Programmes Ministry of Health
3	Dr Sabeen Afzal	MIS coordinator, Ministry of Health Islamabad

Annex D Performance against health outcome targets

The purpose of this Annex is to set evidence drawn from the Quantitative Study against EQ B1: ‘To what extent has the programme achieved its objectives/outcomes and what were the major factors influencing the achievement or non-achievement of the objectives/outcomes?’

We do this by assessing progress against the explicit targets that have been set against the LHWP in each of the regions. These targets are determined by the relevant Provincial Health Sector Strategies, which are articulated in the PC-I for either the LHWP or a new integrated programme in which the LHWP is now housed depending on the province. There is some divergence in articulated health outcome targets across the provinces, with Figure 29 indicating which targets have been articulated by which provinces.

Figure 29 Indicators with targets defined in PC-Is across regions

Indicator	Punjab	Sindh	KP	Balochistan	GB	AJK
Mortality						
Maternal mortality rate	✓		✓			✓
Neo-natal mortality rate	✓		✓			✓
Infant mortality rate	✓					
Under-five mortality rate	✓					
Family planning						
CPR	✓	✓	✓	✓	✓	✓
Maternal care						
TT-2 immunisation		✓	✓	✓	✓	✓
ANC-1				✓	✓	✓
ANC-4		✓			✓	✓
Skilled birth attendance	✓		✓	✓	✓	✓
Institutional deliveries	✓				✓	
Postnatal visit within 24 hours		✓		✓		✓
Infant and young child care						
Early breastfeeding		✓	✓		✓	✓
Exclusive breastfeeding				✓	✓	
Fully immunised children		✓	✓	✓	✓	✓
Stunting	✓		✓		✓	
Wasting	✓				✓	

In order to assess the performance of the LHWP against its targets, we use the Pakistan DHS-VII dataset collected in 2017/18. In particular, we focus on the set of women that were visited by an LHW within the 12 months prior to the Pakistan DHS-VII. This serves as a proxy for the data collected in the LHW-MIS, which records

information for households, women, and children that have been registered by the programme.

Table 12 presents this analysis, with the performance of each province against each indicator scored on a traffic light system. A **green** score indicates that the target has been met or exceeded in a given province; a **yellow** score indicates that the target has not been met, but achievement is within 20% of the target; and a **red** score indicates that the target has not been met, and the achievement is outside of 20% of the target.

Where a province has not set an explicit target for a particular indicator, we set a target based on the median target of provinces where an explicit target is set. We denote with a * in Table 12 where this is the case, allowing us to provide a comparable score across the provinces. Furthermore, we do not report mortality indicators.

Table 12 Performance of the LHWP against health outcome targets 2017/18 (2012/13 in brackets)

	Punjab		Sindh		KP		Baloch'		GB		AJK	
Indicator	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Family planning												
CPR	48	28 (33)	45	25 (24)	40	31 (29)	65	30 (25)	50	34	51	25
Maternal healthcare												
TT2-immunisation	80*	83 (77)	70	62 (55)	80	69 (71)	80	51 (64)	80	64	98	86
ANC-1	90*	94 (78)	90*	86 (76)	90*	89 (77)	90	64 (66)	80	80	91	91
ANC-4	65*	57 (57)	65	51 (58)	65*	53 (55)	65*	38 (46)	80	38	45	52
Skilled birth attendance	85	73 (54)	70*	72 (61)	55	73 (60)	60	42 (41)	70	65	83	69
Institutional deliveries	78	72 (52)	74*	73 (63)	74*	70 (41)	74*	35 (18)	70	64	74*	68
Postnatal visit within 24 hours	80*	66 (42)	80	66 (47)	80*	55 (29)	60	49 (16)	80*	36	86	64
Infant and young child care												
Early breastfeeding	78*	13 (15)	84	30 (17))	75	15 (28)	78*	56 (59)	80	56	50	29
Exclusive breastfeeding	73*	33	73*	53	73*	57	65	58	80	58	73*	37
Fully immunised children	90*	81 (69)	65	44 (34)	90	64 (65)	90	28 (29)	80	52	93	76
Stunting	28	28	30*	52	55	37	30*	43	30	47	30*	33
Wasting	12	3	7*	12	7*	8	7*	22	2	1	7*	6
Proportion achieved	33%		8%		17%		0%		17%		25%	
Proportion achieved or almost achieved	75%		42%		58%		17%		42%		67%	

Table 12 presents a mixed story of performance against the health outcome targets set across the provinces and regions of Pakistan. The best performance is observed in

indicators related to maternal healthcare, a core objective of the LHWP. In this domain the best performing indicators relate to TT injections, the provision of at least one ANC visit, and skilled birth attendance. In each of these cases every province met, or almost met, its target, with the exception of Balochistan.

Performance against the CPR was particularly poor, with no province or region achieving its stated target. However, in the case of this indicator, this failure may be a reflection of overly ambitious target setting. The Pakistan DHS 2017/18⁷¹ notes provincial CPR averages that are far below the current stated targets for the LHWP. Indeed, on average the CPR for the province or region as a whole is approximately half the stated target, and as low as 20% in some cases.

Indicators related to infant and young child health on the whole present a picture of poor performance. No province met its target against breastfeeding indicators, with only Balochistan almost meeting the target against exclusive breastfeeding. As with the CPR targets, this may reflect overly ambitious target setting. It should be noted that the Pakistan DHS 2017/18⁷² that the average rates for the early initiation of breastfeeding and the exclusive breastfeeding were at 20% and 48%, respectively, far below any of the targets set across the provinces and regions.

Comparing total performance across the provinces we find that Punjab is the best performing, having met, or almost met, 75% of all targets presented in Table 12, followed by AJK, which achieved, or almost achieved, two thirds of targets. KP, Sindh, and GB were middle performers, having achieved, or almost achieved, approximately half of all targets. On the other hand, Balochistan was the worst performing province, having met no target, and only almost achieving 17% of targets.

⁷¹ National Institute of Population Studies (2017/18).

⁷² Ibid.

Annex E Qualitative methods

E.1 Sampling

Sampling for qualitative research is embedded in purposive sampling. Its logic lies in selecting information-rich cases for in-depth study. 'Information rich cases are those which one can learn a great deal about issues of central importance to the purpose of the research, thus the term purposive sampling' (Patton 2015).

The purpose, therefore, of sampling in qualitative research is generally to look at variations and comparisons, and less so at prevalence or population size. This is very different from probabilistic sampling, which depends on sampling a truly random and statistically representative sample, permitting confident generalisation from the sample to a larger population. There are a number of ways to select information-rich cases, depending on the purpose or objectives of the study and information available, as well as the duration of research.

For the purpose of the District Case Studies, we propose to undertake maximum variation sampling, which involves picking a number of cases that maximise the variation on dimensions of interest to the LHWP. Using this type of sampling approach will allow the Evaluation to gain greater insights into the performance of the LHWP by looking at different groups in different settings.

In this case, the maximum variation sampling was implemented by selecting the 11 districts presented in Table 3 in Section 4.8.4 by first identifying *high* and *low* performing districts. This identification was based on an initial assessment of performance indicators available in the LHW-MIS by the Evaluation Team. Performance indicators included:

- maternal mortality rate;
- infant mortality rate;
- CPR;
- number of ante- and post-natal visits; and
- number of children vaccinated.

The initial assessment by the Evaluation Team was then validated through interviews with LHWP team members at the provincial level, enabled through ERA 3, as well as interviews via phone call ahead of fieldwork with LHWP district coordinators.

E.2 Data collection tools

Data collection was conducted at the programme and the community level to analyse the perceptions and experiences of both LHWP staff as well as beneficiaries of the LHWP.

At the programme level, data was collected from:

-
- district coordinators;
 - DHOs
 - LHS; and
 - LHWs

In communities, data was collected from:

- women of reproductive age; and
- husbands of women of reproductive age.

A range of data collection tools were used to gather information at these various levels. These are summarised below.

KIIs

KIIs were conducted with DHOs, LHWP District Coordinators, and LHSs. These gathered generic information about the LHWP, as well as seeking to uncover specific implementation issues and challenges. In addition, these sought to provide information to understand the formal and informal structures within which the LHWP operates.

Empowerment ranking exercises with LHWs

A participatory tool designed to analyse LHWs experiences and perceptions of the factors that enable them to express their human agency. This exercise encouraged LHWs to identify, discuss, and list the various activities/functions at the household and community levels that frame power relations and their capacity to make strategic choices, and to rank them according to their importance. Respondents were asked to relate the contribution (if any) of the LHWP to any changes they identify.

Most Significant Change exercises with LHWs and LHSs

A participatory exercise that involved participants recording what they considered to be the Most Significant Change caused by the LHWP during the period under evaluation, and identifying the specific cause of that change. This was used to assess the socio-economic benefits of the LHWP for LHWs and LHSs.

Community Score Cards

A Community Score Card was applied to assess the perceptions of both served communities as well as LHWs themselves on the quality of service provision.⁷³ This was conducted as follows:

- In community FGDs, the community was invited to assess the priority health issues and to define the barriers to delivery of quality services.

⁷³ We followed an approach adapted by CARE and presented in Gullo *et al.* (2016) *A review of CARE's Community Score Card experience and evidence*. Health Policy and Planning, 31, 2016, 1467–1478.

-
- The community was invited to develop indicators for assessing priority issues, and completed the Community Score Card by scoring each of these indicators and giving a reason for the scores.
 - Finally, the community was invited to generate suggestions for improvement.

Semi-structured FGDs with women and men in communities served by LHWP

These explored the perceptions of both women and men (separate group discussions held with each category) on a range of issues related to the perceived health impact of the LHWP at community level. These were used in particular to answer EQ D1, related to impact, with a focus on understanding factors that influenced the achievement or non-achievement of desired health outcomes.

Annex F CEM

F.1 Identifying the impact of the LHWP

It is challenging to rigorously identify the impact of the LHWP in order to make causal claims about the effect of the LHWP on key health outcomes of interest. Essentially, we have a problem of missing information. From the use of observational data available in various rounds of the DHS, we can track the status of women and children that have been exposed to the LHWP. Ideally, we would like to know the status of these same women and children if they had not been exposed to the LHWP. It is the difference between these two states that would give us the true impact of the LHWP.

Thus, the challenge of rigorously identifying the impact of the LHWP on health outcomes is to replicate this comparison by identifying a counterfactual group that is as similar as possible to women and children that have been exposed to the LHWP, i.e. the treatment group. Gertler *et al.* (2011) identify three conditions that a valid counterfactual must satisfy:

- Treatment and counterfactual groups must share on average the same characteristics.
- Treatment and counterfactual groups should react to the LHWP in the same way.
- Treatment and counterfactual groups should not be differentially exposed to other health related programming in the relevant period.

A counterfactual that satisfies the above three conditions can be considered robust to selection bias. An outcome of selection bias is that because of systematic differences between treatment and counterfactual groups (such as pre-existing differences in education levels), the evaluator would not be sure whether observed differences in health outcomes are due to the causal impact of the LHWP or because of pre-existing differences between treatment and counterfactual groups.

Given that we are using observational data not specifically designed for evaluation, and given that the LHWP is rolled out purposively and not randomly, it is to be expected that there will be systematic differences between those served and not served by the LHWP.

To overcome this challenge, we have implemented a matching technique – CEM – to assess the impact of the LHWP against key health outcomes of interest.

CEM seeks to address the problem of selection bias by constructing a credible counterfactual by matching possible counterfactual units to treatment units on a wide set of observed characteristics, such that treatment and counterfactual are as balanced as possible, i.e. that they have exhibit no statistically significant difference in key observable variables other than their exposure to the LHWP.

CEM achieves this by coarsening each covariate available for matching by recoding them so that substantively indistinguishable observations are grouped together and assigned the same numerical value. To see how this works in practice, consider the

covariate *age of woman* for our sample of women aged 15–49 years. We have coarsened this so that 15–19-year-olds are given value 1, 20–24-year-olds value 2, and so on.

Once covariates have been coarsened, an exact matching algorithm is applied to split treatment and covariate units into various strata, with each stratum containing exact values for all coarsened covariates. All units in *matched strata*⁷⁴ are retained. All units in *unmatched strata*⁷⁵ are pruned.

LHWP impact can then be estimated by comparing differences in the uncoarsened data between treatment and counterfactual units, with counterfactual units weighted by the relative size of the exactly matched strata.

We conduct this matching exercise for each round of the DHS separately, as well as by conducting the matching exercise for each level at which we estimate impact. This means that different health outcomes are relevant to different populations. For example, the indicator *CPR* is relevant to the sample of ever-married women aged 15–49, while the indicator *proportion of children fully immunised* is relevant to the sample of children aged 12–23 months. We replicate the matching for each relevant sample to ensure that we provide adequate balance for each health outcome indicator of interest. Finally, we also repeat this matching separately for both the individual- and community-level identification of LHWP coverage.

Table 13 Covariates included in matching algorithm

Matching covariate	Description
Age of woman	Given the focus on health outcomes and particularly the connection to maternal health and family planning, it is important to match women on age.
Education of woman	Education can play an important role in determining health-seeking behaviour.
Gender of household head	The gender of the household head can affect the ability to access health services.
Age of household head	The household head is often the main decision maker and the age of the household head may correlate with attitudes to health-seeking behaviour.
Number of children under five years	LHWP activities are focused on maternal and child health.
Dependency ratio	Households with higher dependency ratios may find it difficult to provide for the full health needs of all occupants.
Wealth index	Wealth is strongly correlated with health-seeking behaviour.
Household has improved sanitation	Reflects the socio-economic level of the household.
Household has improved water source	Reflects the socio-economic level of the household.
Proportion of children in community who attend school	Selection criteria for the LHW requires that the LHW have at least eight years of education; this proxies for the presence of a school in the community.
Proportion of households in community with electricity	Give the selection criteria of the LHW, an LHW is more likely to be present in relatively developed communities; this serves as a further proxy for the development level of a community
Region of Pakistan	There are large differences in health outcomes and behaviour across the provinces.
Urban / rural location	There are large differences in health outcomes and behaviour between urban and rural locations.

⁷⁴ Strata containing at least one treatment *and* one counterfactual unit.

⁷⁵ Strata containing either only treatment or only counterfactual units.

Covariates included in the matching algorithms implemented at these various levels are described in Table 13, which presents the full technical details of the outcomes of the matching. However, in summary we find strong balance between treatment and counterfactual units, both at the level of individual covariates, as well as in combined statistical tests across all covariates. This strongly suggests that CEM presents a viable approach to identifying the impact of the LHWP.

F.2 Defining the causal problem

For each unit of evaluation (e.g. different groups of women, or children), we would like to be able to observe ‘two potential outcomes’: (1) the potential outcome if the unit had been exposed to treatment; and (2) the potential outcome if the unit had not been exposed to treatment. If we were able to observe both outcomes for evaluation unit i then the effect of being treated by the LHWP for unit i would be:

$$Y_i = T_i Y_i(1) + (1 - T_i) Y_i(0)$$

Where:

T_i = treatment status: = 1 if treated; = 0 if not treated

$Y_i(1)$ = outcome for unit i if treated

$Y_i(0)$ = outcome for unit i if not treated

However, given that it is not possible to observe the same individual in two states, one must define a suitable counterfactual group against which to compare evaluation units which have received treatment in order to determine the impact of receiving that treatment. A counterfactual should be selected so as to avoid **selection bias**, which occurs when receiving treatment is systematically related to the potential outcome of interest – in other words, whether there are systematic differences between the treated evaluation units and the counterfactual. If systematic differences are observed, the chosen estimator would be unable to distinguish between the impact of receiving treatment and systematic differences between the treatment and the counterfactual.

To confront the problem of selection bias, we implement a **quasi-experimental approach** to the quantitative component of the evaluation of the LHWP. We propose to implement a specific class of **matching methods** – CEM – in order to determine the causal effect of the LHWP. In general, matching methods work by defining a set of covariates $\mathbf{X} = (X_1, X_2, \dots, X_k)$ on which we would like to match treatment and counterfactual units. We then denote $\mathbf{T} = \{i: T_i = 1\}$ the set of indexes for the treated units; similarly, $\mathbf{C} = \{i: T_i = 0\}$ for the counterfactual units. Given a treated unit $i \in \mathbf{T}$ with its vector of covariates \mathbf{X}_i , the aim of matching is to discover a counterfactual unit $l \in \mathbf{C}$ with covariates \mathbf{X}_l such that the dissimilarity between \mathbf{X}_i and \mathbf{X}_l is very small in some metric.⁷⁶ In simple terms, matching aims to achieve balance in the distribution of covariates between treatment and control groups such that the two groups are

⁷⁶ Iacus (2011).

statistically similar and the counterfactual group is a valid counterfactual for the treatment group.

F.3 CEM

The most commonly used for of matching method is known as **Propensity Score Matching (PSM)**, which seeks to match counterfactual units with estimated probabilities of being treated (i.e. the propensity score) that most closely resemble the treated units. However, this method can exhibit a number of unwanted properties. PSM can exhibit a **high model dependency**, in that it is crucially dependent on the correct estimation of the propensity score which must be estimated. **Mis-specification of the regression estimating the propensity score can bias estimates** (Smith and Todd, 2006). As PSM fails to jointly balance out all of the covariates, increasing balance in some covariates that leads to a decrease in balance in other covariates can counteract bias reduction.

Furthermore, King and Nielsen (2015) illustrate the **PSM paradox** in which excessively pruning observations (i.e. to exclude the worst matches according to the absolute propensity score distance in treated and control units) can actually increase imbalance, model dependence, and bias, even when following the long-standing advice in the literature to use a ¼ standard deviation calliper to prune the worst matches (King *et al.* 2011).

An alternative solution to PSM is to use **CEM**. CEM works by temporarily *coarsening* each covariate available for matching by recoding them so that substantively indistinguishable variables are grouped and assigned the same numerical value. To see how this works in practice one could consider the potential covariate, the age of the woman: one could coarsen this variable by recoding into groups for 20–25-year-olds, 26–30-year-olds, and 31–35-year-olds, and so on.

Once covariates have been coarsened, an **exact matching** algorithm is applied to identify matches which are achieved by splitting all treated and control units into various strata that have identical values on all coarsened covariates. All units in ‘matched strata’ (i.e. strata containing at least one treatment and one control unit) are retained and any ‘unmatched strata’ (i.e. strata containing only treatment units or only control units) are pruned.⁷⁷

To each matched unit i in stratum s , CEM assigns the following weights to adjust for different stratum sizes (necessary as different numbers of treatment and control units are included in the different ‘exactly matched’ strata):

$$w_i = \begin{cases} 1, & i \in T^s \\ \frac{m_C}{m_T} * \frac{m_T^s}{m_C^s}, & i \in C^s \end{cases}$$

Where:

m_C = number of matched control units

⁷⁷ Iacus *et al.* (2011).

m_T = number of matched treatment units

m_C^s = number of control units in stratum s

m_T^s = number of treatment units in stratum s

F.3.1 Beneficial properties of CEM

CEM is preferable to PSM as it works ‘in a sample’ – i.e. it uses information on covariates directly rather than through a propensity score that must be estimated – and requires no assumptions about the data generating process, aside from the usual *conditional independence assumption*, or formally that treatment assignment is independent of potential outcomes conditional on a set of covariates.⁷⁸

$$(Y_i^T, Y_i^C) \perp T_i | X_i$$

CEM also guarantees that the imbalance between treated and control units will not be larger than the ex-ante user choice. This is because CEM is a member of the **Monotonic Imbalance Bounding** class of methods, meaning that improvements in the balance for one covariate can be improved in isolation as it will have no effect on the maximum imbalance for any other covariate,⁷⁹ thus reducing the overall model dependence of CEM. To see this, consider that CEM is an *exact matching method* and so removing or adding covariates will not increase the balance of other covariates that have already been exactly matched. Additionally, this means that the analyst can ex-ante **control the level of balance** in the matched sample.

CEM also meets the **congruence principle**, which requires that there is congruence between the data space and the analysis space. Most matching methods violate this principle, given that the estimation of the propensity score takes covariates from their *k-dimensional space* (with k being the total number of covariates) to a different space defined by the univariate space of the propensity score. Mielke and Berry (2007) show that violations of this principle lead to less robust inferences of impact.

Finally, CEM is particularly attractive as it approximates a **fully blocked randomised experiment**. This is beneficial, as just as with an actual experiment, blocking on all treatment covariates can improve statistical power and efficiency (King and Nielsen, 2015).

F.3.2 Estimation of treatment effects in a CEM setting

To estimate the sample Average Treatment Effect, the following econometric estimation is applied in an Ordinary Least Squares (OLS) framework for continuous outcome variables (such as the number of modern contraceptive methods known), and

⁷⁸ This assumption will be violated if there are some unobserved characteristics that determine programme uptake. To minimise the risk of this assumption being violated, it will be necessary at baseline to collect a rich set of data on different evaluation units (children, households, schools, teachers, and so on).

⁷⁹ To see this, consider that the level of balance is governed by the *coarsening* against each covariate, rather than an interaction within a regression, such as one required to compute a propensity score.

in a Probit regression framework for binary outcome variables (such as the CPR). In both cases these are weighted by the CEM weights, w_i , given above.

In an OLS setting, our estimation model is as follows:

$$Y_i = \alpha + \beta D_i + \sum_{k=1}^n \gamma_k X_{ik} + \varepsilon_i$$

In a Probit regression setting, our estimation model is as follows:

$$Y_i = \Phi \left(\alpha + \beta D_i + \sum_{k=1}^n \gamma_k X_{ik} + \varepsilon_i \right)$$

Where:

Y_{i1} = value of outcome indicator for unit i at relevant DHS round

D_i = treatment status of unit i

β = coefficient that gives the ATE

X_{ik} = vector of covariates included as controls in estimation regressions

γ_k = coefficient against k th covariate

$\Phi()$ = probit function, i.e. the inverse normal cumulative distribution function

We use a final specification of the OLS estimation framework that includes a vector of covariates, X_{ik} , at the level of the woman, household head, and household, as well as geographical covariates. There are a number of advantages from using such a specification. First, the inclusion of covariates reduces the noise we observe in the error term, ε_i , as the inclusion of covariates explains more of the variation in the outcome of interest. This allows us to estimate the impact of the LHWP measured by β with greater precision, i.e. β is estimated with lower standard deviation, increasing the power of the sample to detect impact. Second, the inclusion of covariates further controls for remaining differences between treatment and counterfactual units, further increasing the robustness of reported results. Following Iacus *et al.* (2012) we include a sub-set of *uncoarsened*⁸⁰ covariates included in the first stage matching in the final estimation model. These are listed in Table 14.

⁸⁰ That is, age and education variables are uncoarsened in the estimation model.

Table 14 covariates included in estimation model

Level	Covariate
Woman	Age
	Education level
Household head	Gender
	Age
Household	Wealth index
	Household has improved sanitation
	Household has access to electricity
Geographical	Region
	Urban/rural

F.3.3 Interpretation of β in an OLS and Probit setting

In an OLS setting the coefficient β can be interpreted as the estimate of the absolute change in the outcome variable of interest that results from being exposed to the LHWP. For example, in the case of the variable *number of modern contraception methods known*, if the coefficient $\beta = 0.5$, this would imply that a woman being exposed to the LHWP would increase the number of modern methods known by 0.5, for the average woman in the sample.

In a Probit setting, the coefficient β is interpreted differently as a change in the z-score in the outcome variable of interest. For ease of interpretation, therefore, we instead report the marginal effects that result from the Probit regression. These should be interpreted as differences in probabilities in the outcome variable between those who are and are not exposed to the LHWP. For example, consider the case of the CPR, or the proportion of women who are currently using any method of contraception. If the marginal effect is 0.5, this would imply that women who are exposed to the LHWP are 50% more likely to be currently using any method of contraception than women who are not exposed to the programme. All marginal effects reported in this evaluation report are reported as average marginal effects.

F.4 Robustness of results presented in this report

As is the case for any quantitative approach that seeks to attribute the causal effect of a programme such as the LHWP on outcomes of interest, there needs to be an ability to control for selection bias. In other words, the ability of the approach to control for systematic differences between units that have been exposed to the LHWP and an identified counterfactual against which differences in outcomes of interest can be assessed and causal effect can be attributed to the LHWP.

The application of the CEM approach to observational data available through several rounds of the Pakistan DHS presents its own set of challenges. In an ideal setting, treatment and counterfactual units would be matched using a pure baseline (i.e. before the LHWP had started) on a full range of covariate variables as well as health outcomes, to ensure that all evaluation units are fully matched. Clearly this is not possible in the case of using Pakistan DHS data to assess the impact of the LHWP.

However, it is still possible to match households on a set of characteristics that are thought to be driving selection bias as they are systematically different across treatment and counterfactual units and are relevant to outcome measures of interest. For the matching delivered by CEM to be valid, it needs to be calculated using relevant variables⁸¹ that are, crucially, not influenced by the LHWP. This is an important challenge in the case of the evaluation of the LHWP, as we do not have information about households in the Pakistan DHS from before the start of the LHWP. In other words, we do not have a 'pure baseline'. Hence, to meet this important condition our CEM models are constructed using only 'static variables' that are not influenced by the LHWP.

To illustrate the performance of the matching, we present in Figure 30 to Figure 33 the outcome of the first stage of the CEM approach each level of matching that was required in order to report the impact of the LHWP against indicators reported in this report. These matching results are presented for the individual level estimation,⁸² on the Pakistan DHS 2017/18 round of survey. The performance of this matching is reflective of the performance of matching for other rounds of the Pakistan DHS and for the community-level estimation.

Figure 30 to Figure 33 report a range of information that gives us confidence in the success of the matching. Firstly we present the pre- and post-matching standardised difference on all of the individual covariates indicated in Table 13 as well as additional variables that were not included in the matching but would be of concern if they were not matched in the post-matching setting. For each population of interest presented in Figure 30 to Figure 33, there is significant improvement in the balance of individual covariates providing confidence in the success of the matching.

We also report two statistics that give an indication of the post-matching balance across all covariates cumulatively: Rubin's B and Rubin's R. Rubin's B provides the absolute difference between the means of a linear index across all covariates indicated in Figure 30 to Figure 33 between treatment and matched counterfactual. Rubin's R provides the ratio of treatment to matched counterfactual variances of this linear index. Rubin (2001) recommends that properly balanced samples should have a post-matching Rubin's B score under 25, and a Rubin's R score between 0.8 and 1.25. In each case, for each population of interest presented in Figure 30 to Figure 33 we report that the CEM has satisfied this requirement to provide for adequately matched treatment and counterfactual units.

This analysis has also been conducted for all rounds of the Pakistan DHS as well as for the community level estimation. In each case, we find significantly improved matching on individual covariates once CEM has been applied, and in each case, we satisfy the Rubin's B and Rubin's R requirements for adequately matched treatment and counterfactual units.

⁸¹ Variables that actually drive the selection bias, i.e. the systematic differences that exist between treatment and counterfactual.

⁸² That is, when defining treatment has having been visited by an LHW in the last 12 months.

Figure 30 Balance: ever married woman sample, individual-level estimation

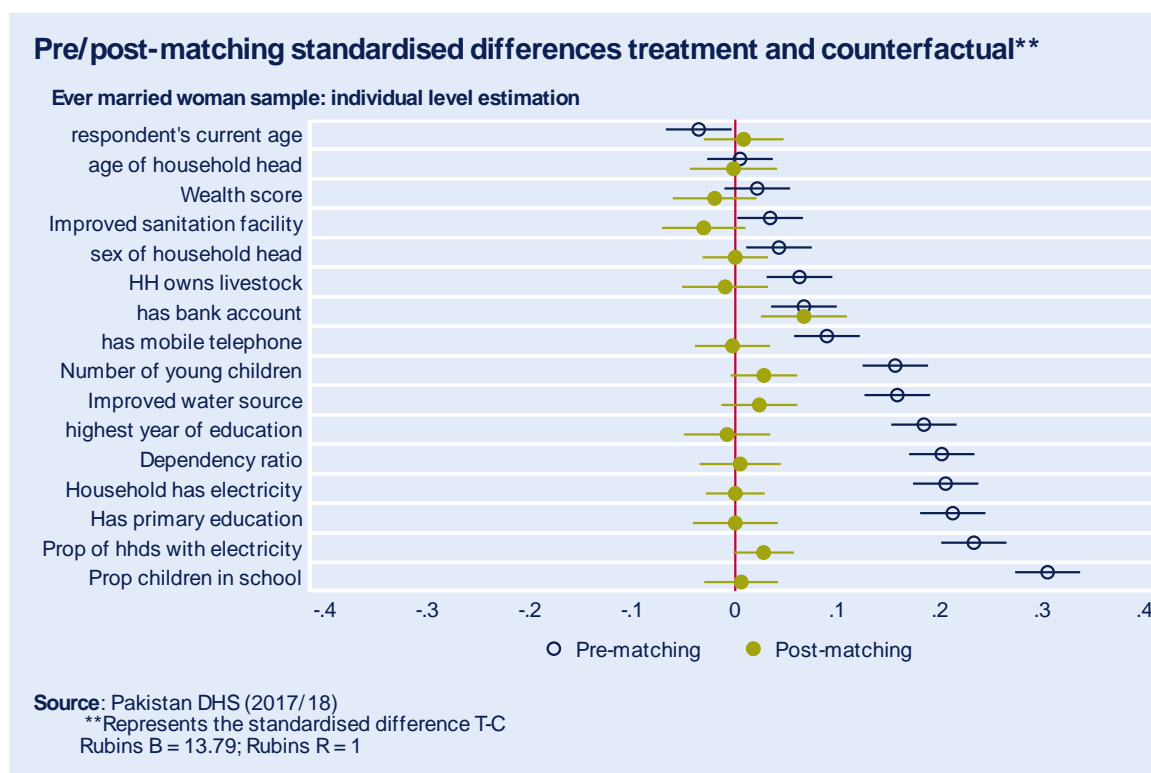


Figure 31 Balance, women with birth in last five years sample, individual-level estimation

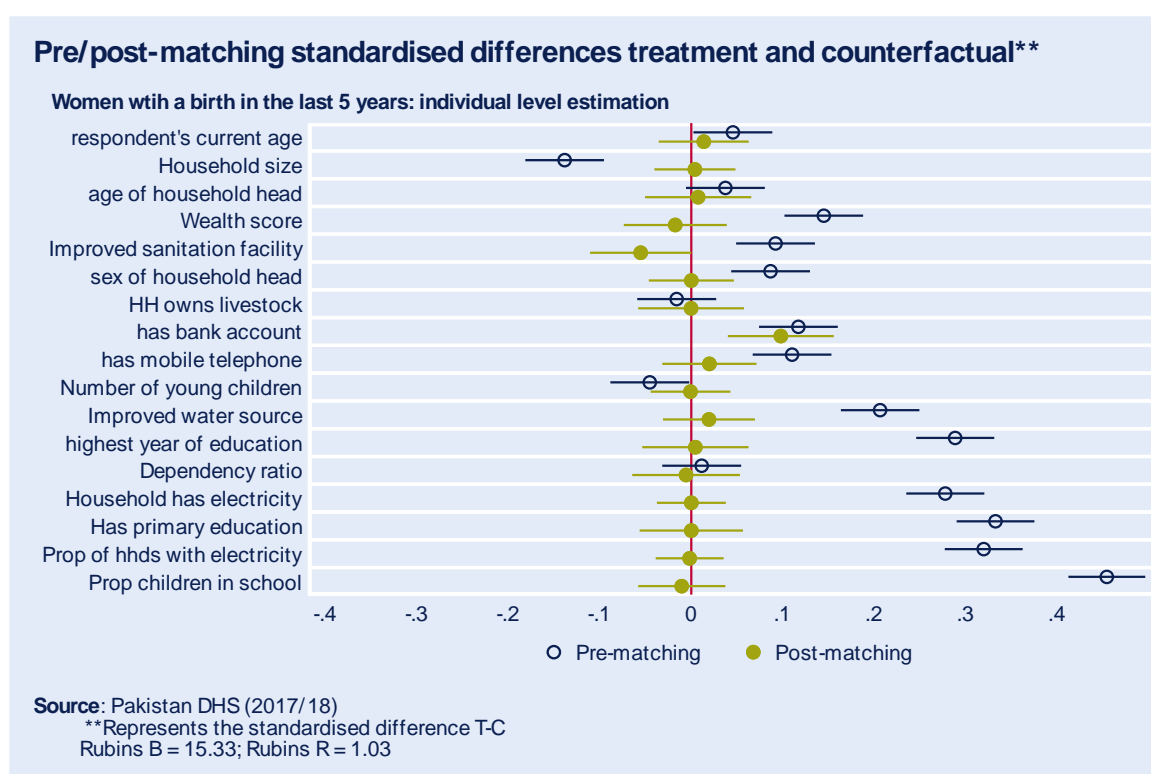


Figure 32 Balance: child aged 12–23 months sample, individual-level estimation

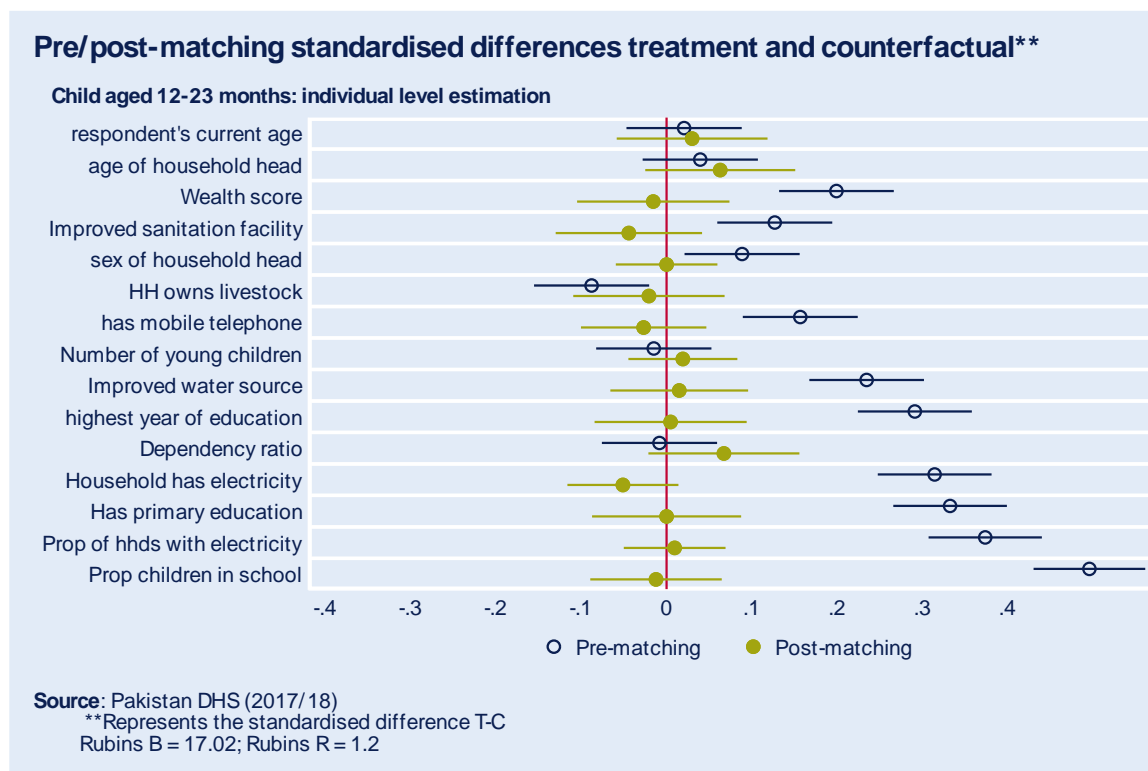


Figure 33 Balance: child aged six months or younger, individual-level estimation

