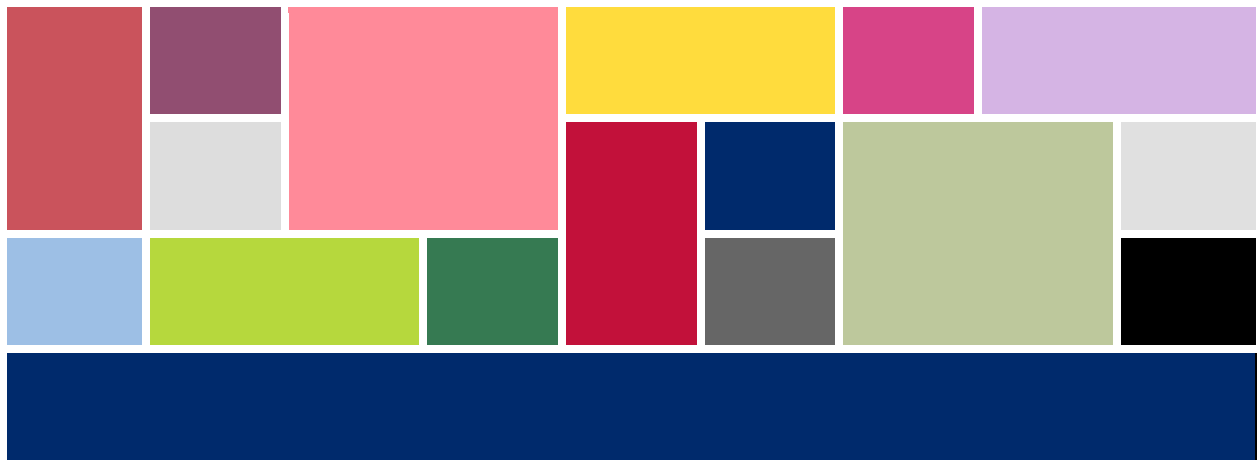




Postnatal Care, with a Focus on Home Visitation: A Design Decision-Aid For Policymakers And Program Managers



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Abbreviations & Acronyms

CHW	Community Health Worker
MCSP	Maternal and Child Survival Program
PNC	Postnatal Care
PNHV	Postnatal Home Visit/Visitation
SNL	Saving Newborn Lives
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization

I. Introduction

Over the period since 2008, considerable attention has been given to testing community-based strategies involving postnatal home visitation (PNHV) in low-income, high newborn-mortality country settings (see **Annex I** of this document). A number of countries have made efforts to implement such programs at scale and lessons are now accruing on these program experiences (**see Annex II**). However, also over this period, many countries (including those that have implemented PNHV programs) have seen marked increases in facility births and there is now increasing attention to improving the quality of facility-based care. There is therefore a need, at this time, to review programmatic strategies addressing postnatal care (PNC), in light of both what has been learned from evidence and experience to date and the evolving situation on the ground.

The current document is intended to pull together practical insights from such evidence and experience, and to support ministries of health and their partners who are developing programs and services that aim to improve health outcomes in the postnatal period, for newborns and their mothers.

Although this publication is being released as a joint product of the United States Agency for International Development (USAID)/Maternal and Child Survival Program (MCSP) and Save the Children's Saving Newborn Lives (SNL) program, it was conceived and developed by a working group with members drawn also from USAID, the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF).

The information presented here supplements and extends advice on PNC and related areas, as reflected in several WHO publications and sources, notably WHO/UNICEF Joint Statement: Home Visits for the Newborn Child—A Strategy to Improve Survival (2009). The Joint Statement recommends postnatal home visitation programs ...

“...where access to facility-based skilled care is limited... home visits should be initiated as soon as possible after birth or after returning home from the facility... Additional visits on day 3 and, if possible, on day 7 can improve home care practices and identify danger signs or illness. Home visits can be done by health professionals or by appropriately-trained community health workers.”

Other important WHO documents that build on this recommendation include:

- Informal Meeting on Provision of Home-Based Care to Mother and Child in the First Week After Birth: Meeting Report (2012)
- Caring for the Newborn at Home: A Training Course for Community Health Workers (2012)
- WHO Recommendations on Postnatal Care for Mother and Newborn (2013)
- Caring for Newborns and Children in the Community: Planning Handbook (2015)

The current guidance document offers suggestions, informed by lessons drawn from public-sector experience to date attempting to implement PNHV programs at scale. (For details on these programs, see Annex II.) We suggest that home visitation be understood as an approach for providing specific services or interventions, rather than as a simple “evidence-based” intervention. That is to say, home visitation is one way of delivering services (and by no means the only way).

Scope

Although maternal and newborn home visitation programs implemented to date have emphasized the postnatal period, they have generally also included contacts during pregnancy. Most have focused largely on newborn issues; however, the 2009 Joint Statement and subsequent WHO documents have recommended maternal—not only newborn—content. The programs reviewed as background for this document have been limited to those focused on home visitation. However, this document also discusses complementary approaches involving provision of PNC services in in-patient and out-patient health facilities. In principle, health facility admissions for childbirth provide an important opportunity for very early postnatal assessment and counseling before the mother and newborn are discharged home. Up till now, this opportunity has not received much program effort despite a marked increase in facility births in many countries. Furthermore, with a new focus recently on improving content and quality of maternal and newborn care, particular attention has been given to care at birth. There is an opportunity for more attention also to be directed to the period beyond labor and delivery.

Most experience with postnatal home visitation till now has focused on *care-seeking* (for routine care and for danger signs), *identification of complications and initial management*, and *essential newborn care* household practices. However, it is increasingly recognized that contacts through the postnatal and early infancy period offer other opportunities, such as services related to maternal mental health and mother–newborn engagement to support infant socio-cognitive development. As important as these other services are, they fall largely outside the scope of this decision-aid.

Objective

The objective of this document is to provide **practical operational guidance** to ministries of health, policymakers, program managers and other decision-makers on how to design an optimal mix of service delivery approaches for the postnatal period that:

- is responsive to the particular circumstances and conditions of a given setting,
- takes into consideration the needs of mothers **and** their newborns, and
- can feasibly be implemented effectively at scale.

II. Home Visitation Evidence & Program Experience

Trial Evidence

Over the past two decades, several trials, mainly in South Asia and more recently in sub-Saharan Africa, have tested whether reductions in neonatal mortality could be achieved through community-based home visitation packages, especially in settings where access to facility-based care at birth was low and the quality of this care was poor. A decade ago, it was estimated that implementing such interventions at the community level, with universal coverage, could avert approximately two-thirds of maternal, neonatal and child deaths (Darmstadt et al. 2008). It appeared that newborn mortality could be reduced even in settings where there seemed to be too many barriers—cultural, financial, geographical—for most women to get to health facilities to give birth. Mortality impact was demonstrated in several of these trials and essentially all resulted in improved newborn care practices. However, a review of the underlying context, scope of the interventions, and outcomes of these community newborn care trials provides helpful insights into why the impact achieved in these studies may not necessarily generalize to programs delivered at scale. These trials tested various combinations of intervention elements including: group-based health education, counseling provided during home visits during pregnancy and the postnatal period, facilitated referral for newborn illness, and case management of newborn illness at home or the health post.

In addition to these trials focusing on home visits with individual women—both during the postnatal period and during pregnancy—there has also been a series of trials on participatory women’s groups with an emphasis on maternal–newborn health (not reviewed here). Based on findings from these studies, guidance has been developed and published in the *WHO Recommendation on Community Mobilization through Facilitated Participatory Learning and Action Cycles with Women’s Groups for Maternal and Newborn Health* (2014).

Major Lessons Learned

As described below, five major lessons can be drawn from the PNHV trials.

- 1. Context matters.** Major secular changes in health and other sectors have rapidly altered the maternal–newborn care landscape, sometimes even over the course of a given trial. Some studies managed to increase facility births significantly as a result of their community interventions; however, in others, such increases in facility births were seen in both intervention and control arms. Other important contextual factors include the increase in use of mobile phones, expanded infrastructure such as roads, and increases in purchasing power of rural families.
- 2. Content matters, too.** Across the studies, the intervention packages included different combinations of content, including:
 - Group-based health education
 - Preventive home visits *during pregnancy*
 - Home visits *during the postnatal period* according to various schedules
 - Facilitated referral for newborn illness
 - Case-management of newborn illness at home or the health post

Some of the more recent trials were designed acknowledging that reaching mothers and babies at home early after childbirth could be difficult and thus focused more on visits during pregnancy, which are easier to schedule. In general, given the research designs used in these studies, it is impossible to discern which elements of the packages were responsible for the specific outcomes observed.

3. **Community health workers are not all the same.** Community health workers (CHWs) are often discussed as if they are a homogenous group or in terms of a single characteristic, such as whether they are paid or unpaid. However, there were important differences across the trials, including selection criteria, residency requirements, level and duration of training, scope of their role, ratio of CHWs per household, and supervision received.
4. **Implementation varies across settings.** Major differences in how the studies were implemented and evaluated are also apparent. This is particularly true for the timing and coverage of home visits during pregnancy and the postnatal period. There were challenges, to varying degrees, across all studies in reaching newly delivered women—even in sites with active pregnancy surveillance. There was also variation in the following areas:
 - efforts made to retain CHWs,
 - the appointment of supervisors (from within existing government systems or specifically for the studies),
 - support given for referrals from CHWs, and
 - linkages with health centers and hospitals.
5. **Impact is not guaranteed.** All the trials did show improvements in certain targeted behaviors (e.g., birth preparedness, immediate skin-to-skin care, cord care, early breastfeeding). However, even when combined with efforts to improve facility–community linkages and continuity of care, not all studies demonstrated reduced mortality risk.

For more details, see **Annex I**.

Pilots

There have been well-documented efforts at larger scale than most of the proof-of-concept trials discussed in the previous section. Pilots have been conducted with services delivered by existing cadres of paid health auxiliaries, by community volunteers, or by a combination of the two. Several of these pilots have been rigorously evaluated. Program effects were seen on some critical care practices at birth and within the first few hours of life, attributable primarily to counseling and health education provided during pregnancy, rather than during PNHVs (Sitrin et al. 2013, 2015). Despite more intensive program support than would normally be possible in government programs operating at scale, none of these pilots resulted in a high proportion of newborns successfully reached within the first 2 days after birth.

Country Program Experience, Implementing At Scale

Introduction

There is a long history of providing PNHVs through government health services in middle- and high-income countries, but current interest arises from more recent experience. Beginning in 1995, Abhay and Rani Bang, along with their colleagues—through their non-governmental organization SEARCH (Society for Education, Action and Research in Community Health, based in a disadvantaged area of rural Maharashtra state of India)—developed and tested a package of interventions designed to reduce newborn mortality. Their approach rested primarily on home visits by CHWs, including: surveillance to identify pregnant women, pregnancy home visits, attending home births to address needs of the newborn, and multiple early PNC visits. The Bangs' work (1999) showed that a relatively low-tech set of interventions—if reliably delivered—could substantially reduce newborn mortality. Inspired in part by this experience, over 50 countries now have a policy of providing PNHVs to mothers and newborns. However, most governments that have introduced the PNHV approach at scale have encountered challenges and have not reached coverage levels adequate to achieve measurable mortality impact.

Methods

Recognizing the challenges that PNHV programs have faced when implemented at scale, a team of technical specialists from WHO, UNICEF, USAID, SNL, Save the Children, and USAID/MCSP conducted a global review of selected countries' experience as they have sought to implement PNHV programs at scale through government health services. The purpose of the review was to understand how to achieve better outcomes through such programs implemented under real-world conditions. Members of the team made in-country visits to interview key informants (mainly Ministry of Health technical officers and staff working for bilateral and multilateral technical assistance partners) and to review available relevant documentation and data.

Findings and Conclusions

Results from country experience attempting to implement PNHVs at scale have generally not been encouraging. Team members were unable to identify any programs introduced over the past decade and implemented in the public sector that have achieved and sustained, high effective coverage at scale under routine conditions. *In most settings, the model demonstrated by SEARCH, tested in a number of pilots and reflected in recommendations of global level guidance documents, has not proven feasible to deliver effectively at scale under usual public sector conditions.*

One positive finding, however, has been that when countries have encountered serious challenges implementing PNHVs, in most cases they have adjusted by developing revised approaches that more realistically fit their local contexts. Examples of these are adjustments are as follows:

- **A greater focus on facility-based postnatal contacts**, including pre-discharge assessment for facility-born newborns and their mothers;
- **Increased emphasis on community-level programming** to promote key PNC practices by taking advantage of contacts during pregnancy, including antenatal home visits; and
- **Specifically targeting high-risk mothers and newborns for PNHVs**, rather than using a "blanket approach" that attempts to reach all mothers and newborns.

The main conclusion of the review is that most countries do not have primary health care systems that are strong enough to achieve and maintain high PNHV coverage. It is certainly true, particularly in settings where many births still occur at home without the assistance of health professionals, that there can be considerable benefit from PNHVs. The painful reality is that in most settings that could benefit the most from such a strategy, it will not be feasible to achieve high coverage at scale with such services delivered under routine conditions.

Based on the experience of these large-scale programs, it is clear that a country considering the introduction of PNHV services should seriously study feasibility and context when determining whether and how to provide such services to an adequate standard. Countries should be encouraged to view PNC programming holistically and be provided with methods and tools that allow them to develop a flexible, tailored approach as they consider the incorporation of PNHVs (or other related strategies) into their health services. Strategies need to be developed that take contextual factors more fully into account; no single approach will be appropriate and effective in all settings.

Further conclusions from this review:

- *Low coverage at scale:* Among countries included in the review, only Sri Lanka has documented high coverage of PNHVs at scale and sustained this performance over time. Most countries adopted ambitious PNHV visit schedules but subsequently have been unable to achieve visit coverage at scale that would meaningfully impact newborn mortality.
- *Variation in country response to low performance of home visitation programming:* Some countries have ceased efforts to provide PNHVs following poor results, while others have continued with PNHV programming

despite low performance. Still other countries have responded to disappointing performance by modifying their strategies for providing PNC and home visitation, thus recognizing the importance of learning and adaptation.

- *Limited emphasis on service delivery and quality:* To date, country-level health officials have placed greater emphasis on details of the visit schedule and identifying which cadre is to provide the service. Less emphasis has been directed to supporting the *delivery* of PNHV's and ensuring their *quality*. Increased attention to delivery and quality would benefit newborns and conform to WHO's current focus on strengthening the quality of care at childbirth.
- *Health system requirements:* Effective delivery of PNHV's clearly requires the support of a strong primary health care system. Many of the factors that stakeholders identified as being crucial for the effective delivery of PNHV's also represent characteristics of a well-run health care system. It may not be possible to achieve desired results at scale through PNHV's without a strong primary health care system.

Recommendations arising from the program review:

- *Provide operational guidance to countries.* Countries require operational guidance to help them determine how PNHV's may (or may not) fit into their mix of services and whether they have the resources to effectively deliver such services universally at scale and at adequate coverage and quality. A country's decisions on whether and how to introduce PNHV's should be informed by available resources, the local context, and the "fit" of PNHV's with other related services, notably facility-based PNC provided by professional health workers.
- *Prioritize pre-discharge PNC.* Countries should prioritize the provision of high-quality pre-discharge PNC to all babies born in facilities and their mothers, especially in settings where most childbirth is now occurring in health facilities. Many countries and facilities miss the opportunity to provide this critical service. Provision of good pre-discharge PNC would reduce the need for very early PNHV's—visits that are very difficult to deliver in most countries.
- *Encourage and facilitate local adaptation of recommendations.* Countries should consider schedules and approaches to implementing PNHV's beyond the provisions of the 2009 Joint Statement and should not interpret its recommended schedule of PNHV's as an inflexible mandate. For example, some countries that have not been successful in achieving adequate coverage of PNHV's have adapted approaches to providing PNC that include:
 - greater focus on facility-based postnatal contacts;
 - increased emphasis on household-level contacts during pregnancy to promote key postnatal practices; and
 - targeting PNHV's to high-risk mothers and newborns.

For more details, see **Annex II**.

III. Decision-Making Considerations

Introduction

Rationale: The time from birth through the following days and weeks is a period of high risk for mothers and newborns.

Overall goal: Achieving better population-level maternal and newborn health outcomes through high effective coverage of key interventions and behaviors

The main substance of this decision-aid document falls in this section, which is intended to help users start thinking about what may be a suitable strategy to increase PNC coverage for mothers and newborns (which may or may not include PNHV's), in their particular settings.

Key Considerations

The first key consideration is, "*What do you have to work with?*" What are the conditions or characteristics of your setting that may be relevant for provision of this kind of service? What resources are available? The first major sub-section below (A) addresses these issues.

The next important set of considerations relates to the various approaches that could be appropriate for your setting. There may be good evidence (e.g., from one or more randomized control trials) that a particular approach or model has worked elsewhere. In that sense, it could be considered "evidence-based." Although this is a good starting point, such evidence alone is not enough. What is most important is whether or not a particular approach could reasonably be expected to work *in your setting*—achieving high coverage on a sustained basis, at scale. That will depend not only on its demonstrated effectiveness elsewhere but on the extent to which requirements for effectiveness can be met in your particular context. The second subsection (B) addresses these issues.

To summarize, the optimal, feasible strategy for achieving and sustaining a high level of effective coverage *depends largely on context*, described above as "characteristics of your setting." To achieve effectiveness, the *mix of delivery approaches you select needs to fit with local opportunities and constraints*. No one approach or model will be appropriate in all settings, even approaches or models that are "evidence-based" or have been rigorously demonstrated to work elsewhere. To be effective, any particular strategy or service delivery approach will have certain requirements or conditions that need to be met.

So, when considering various options for your country setting, in addition to ensuring its potential effectiveness (e.g., as demonstrated in a randomized controlled trial), you need to consider whether or not the necessary conditions for it to be effective can actually be met in your setting, at scale and on a sustained basis. Would this approach really be feasible? Again, *feasibility* is not a universal quality; it is a function of *fit between a specific context and the strategy being considered or implemented*. The Box below provides additional guidance on ensuring a good fit between your overall strategy and your setting.

To determine which strategies or approaches may be effective in your setting, consider the **fit** between:

- Your specific **context** (i.e., what you have to work with), which may include a range of issues, such as:
 - Available platforms (e.g., services available below the health center level, CHW, pregnancy contacts)
 - Current service utilization (e.g., place of birth—health facility vs. home)

AND

- Characteristics of the **strategy** under consideration, such as:
 - Its expected benefits in your particular setting
 - Its requirements for effective delivery (i.e., What will it take to deliver the services at scale? Is it realistic to expect that these requirements can be met?)

As an example, if you are considering adopting a program of universal PNHV's conducted by CHWs, there are several questions to consider, such as, "What CHW program(s) do you currently have to work with?" and "Are suitable, active CHWs widely available to provide such a service feasibly?" If not, consider other options.

In the section below, a whole range of such questions are posed. Once you have gone through it, the design principles that have begun to take shape in this document should become somewhat clearer. Note that as you consider what mix of approaches will be most appropriate for your setting, you will need to assess and determine expected effectiveness, feasibility, efficiency, and acceptability—for your particular context.

Key Definitions

The key terms listed below are explained in terms of how they are used in the context of this document.

- **Effective:** the strategy achieves its goal (a strategy is effective when it results in high coverage with services of adequate quality and therefore contributes to improved outcomes at population scale)
- **Feasible:** the services can actually be delivered as intended in your particular setting, at scale and on a sustained basis
- **Efficient:** the resources required for effectiveness are reasonable, given what you have available, at scale and on a sustained basis
- **Acceptable:** the strategy, and what's required to effectively deliver it, are acceptable to managers, service providers, and beneficiaries in your setting

A. Characteristics of Your Setting

The first step in developing an effective approach to providing PNC, as outlined here, is to assess the relevant characteristics of your country context. The table below is organized as a decision tree, laying out some of the main considerations. For each consideration, a number of potentially important questions to address are listed and implications of some possible answers—which, again, should be fitted to your particular setting—are outlined.

Note that what is important here is what is *actually* happening at scale, not what is officially *supposed* to be happening (at scale) or what may be happening in a small area, such as where a project is providing intensive inputs to a pilot effort that may not be replicable at scale. Although this decision tree provides a range of considerations and other information to help get you started, it is certainly not exhaustive; other very important issues, beyond what is outlined here, will also likely need to be addressed as you work out the best possible mix of approaches for your setting.

	Based on answers to the following (for your setting)...	Consider...
	Available platforms	
Primary health care structures	<ul style="list-style-type: none"> • Is there a functional service delivery level below the health center level, catering to a population of several thousand rather than several 10s of thousands (e.g., health post, dispensary)? • How feasible would it be for health workers at this level to provide PNC services? (This will depend in part on how many workers there are per site and their current workload and availability.) • Do health workers at this level have suitable characteristics for this role? How many days per month or per week are staff at this level available to provide such services? 	<p>While improving access to higher-level care, shifting certain functions to lower levels</p> <p>Expanding the role of health workers at the peripheral level to include more PNC of mothers and newborns</p>
CHWs	<ul style="list-style-type: none"> • Are there health workers or CHWs working in communities/villages (i.e., not based in health centers) at scale, under government health services? • What proportion of CHW positions are either vacant or filled by workers who are essentially nonfunctional? • What proportion of CHWs live in the catchment areas for which they are responsible? • What population does each CHW cover? How big an area do they cover? • What means of transport do they use? By usual transport, how long does it take to reach the most distant households in their catchment area? • How many days per month are they available for community service in their catchment area? Are they available only on certain days each week or each month? • What is the sex distribution (M/F) among CHWs? If many are male, in this cultural context, how acceptable would it be for them to conduct maternal–newborn health-related home visits? • What level of MNH-related knowledge and skills do they have? To what extent is it reasonable to expect them to play a clinical role during contacts outside the facility (e.g., in assessing for and initiating care for complications)? • Realistically, if the CHWs were given new/additional home visitation duties, how much time per week could they spend on conducting PNHVs without it conflicting with their other responsibilities? • Does a structured mechanism exist for identifying pregnant women and births? Of all newborns in their catchment areas, what proportion could they be reasonably expected to reach? (and how soon after birth)? 	<p>To the extent that it could be effective and feasible in your setting, having auxiliary health workers or CHWs involved in home visitation or providing services in sites other than the health facility. These expanded or additional roles or services could:</p> <ul style="list-style-type: none"> • be limited to pregnancy visits; &/or • be limited to postnatal visits for high-risk cases; &/or • also involve routine PNHVs for all births <p><i>depending on what's feasible & appropriate in your setting.</i></p>

	Based on answers to the following (for your setting)...	Consider...
	Available platforms	
ANC	<ul style="list-style-type: none"> • What proportion of pregnant women receive at least some antenatal care? • Beyond routine clinical preventive content, what counseling or health education do pregnant women normally receive? • What postnatal-related content is included (e.g., maternal or newborn danger signs, thermal care, clean cord care, early initiation and exclusive breastfeeding)? • Other than during ANC, are such messages delivered through other means (e.g., through CHW contact with pregnant women and other family members, particularly those with important decision-making roles)? 	Exploring ways to make current ANC (and any home visits or other contacts during pregnancy) more effective for counseling or health education—including information/guidance on newborn care and recognition of newborn or maternal danger signs
Health facility	<ul style="list-style-type: none"> • For normal facility births, on average, how long after birth are mothers and babies discharged home? If the duration of stay is shorter than recommended, how feasible would it be to increase it? • Before discharge, what counseling and what clinical assessment of the mother and newborn are done (e.g., assessing for breastfeeding difficulties)? In what way is pre-discharge counseling/assessment monitored? If some change were introduced—for example, increasing attention to certain aspects of care—what obstacles may be encountered (e.g., inadequate staff for current patient load)? • For very small newborns what, if any, special provision is made for follow-up after discharge? 	<p>Increasing admission length if feasible, at least for mothers or newborns who are at higher risk</p> <p>Addressing barriers to optimal pre-discharge assessment and counseling</p> <p>As feasible, providing for postnatal follow-up, either at the health facility or through CHW home visits</p>
Home	<ul style="list-style-type: none"> • If a significant proportion of births happen at home, are traditional birth attendants (TBAs) commonly involved? Who else assists with home births—relatives/family members, health facility staff (nurses/midwives) who live in the community, others? 	As appropriate and feasible, involving such care providers in counseling (e.g., on essential newborn care and maternal and newborn danger signs)

B. Strategies: Requirements for Effectiveness

As outlined in the introduction to Section III, keeping in mind what you have to work with in your particular setting, consider what approaches could be feasible and effective as part of a suitable overall strategic mix. In any given setting, one or a mix of two or more approaches may be most appropriate—based on expected effectiveness and context-specific feasibility. A number of possible approaches related to PNC are provided below. For each, we have outlined several possibly relevant requirements or considerations.

I. Home Visits during Pregnancy

There is evidence and program experience suggesting that home visits during pregnancy *can* be effective for addressing *postnatal* issues, including:

- Care-seeking for danger signs
- Clean delivery
- Thermal care
- Early and exclusive breastfeeding
- Dispensing of commodities for use at delivery (for home births) and during the postnatal period (e.g., misoprostol, chlorhexidine, iron supplements)

This may be a viable option in settings where there is a suitable existing cadre of CHWs (or health workers) with sufficient flexibility given their current responsibilities to take on this additional function, and where these workers' catchment populations and areas are such that the service is feasible at high coverage.

With two or three contacts over the second and third trimesters of pregnancy, there is considerable flexibility on timing, making pregnancy visits more feasible for CHWs and pregnant women than early postnatal visits, which have strict timing requirements. So—perhaps not surprisingly—efforts to implement home visitation programs at scale have generally performed better on this antenatal component than for early postnatal visits. Note that appropriate counseling on danger signs as part of these contacts during pregnancy can increase the likelihood of timely care-seeking during the postnatal period.

II. Taking Advantage of Other Pregnancy Contacts

In principle, *antenatal clinic visits* can (and should) be used for health education and counseling related to pregnancy, childbirth and the postnatal period. Content addressed during these clinic visits can include the issues listed above. In some settings, pregnant women's groups, with facilitation by health workers or CHWs, have been successful as a platform for such content.

III. Home Visits in the *Early Postnatal* Period

The main rationale for home visits within the first day or two of life is the high risk of newborn and maternal complications during this period. Such visits provide the opportunity for active case-detection for maternal or newborn danger signs and facilitated referral (in some cases preceded by initiation of treatment). These early contacts can also be important for counseling on essential newborn care practices. Under optimal circumstances, early PNHV's can have a considerable impact. However, their effectiveness in terms of population-level impact requires that high coverage at scale is achieved and that the CHWs (or health workers) conducting the visits have the necessary competence and confidence to assume a quasi-clinical role. Most countries that have attempted this approach on a routine program basis have had difficulty achieving good coverage and ensuring quality of care.

Based on pilots and program experience, it is evident that relatively intensive support is needed to achieve high coverage. In general, this has not proven feasible in programs operating at scale in the public sector. A key challenge to early PNHV is that their effectiveness in reducing mortality risk appears to be very dependent on timing. Early home visitation requires both that families systematically inform their local CHWs when births occur and that CHWs are able and willing to come on short notice. Even where more intensively supported, early PNHVs do not reach most newborns within the first 24 hours after birth, the period during which there is the highest risk of newborn death.

IV. Home Visits *later* in the Postnatal Period

Later in the postnatal period, with a more relaxed timing schedule for visits, it can be easier and more feasible to achieve higher coverage. However, it may not be reasonable to expect first PNHV occurring after the first 2–3 days of life to be as effective as an active case-detection strategy in reducing mortality risk. Moreover, in the absence of effective counseling during pregnancy, these later visits may not contribute to reducing deaths arising from suboptimal care in the period immediately after birth (e.g., early initiation of and exclusive breastfeeding, thermal care, clean cord care and other aspects of normal newborn care).

Later PNHVs may be helpful, however, in conveying messages on exclusive breastfeeding, danger signs and care-seeking (including subsequent routine preventive care, such as immunizations and family planning). As with other health care contacts—either at home or in the health facility—if the experience is a positive one for the mother, these visits can help build the community's relationship with the health worker and health system, which can have far-reaching benefits. Note also that widespread use of mobile phones opens up other new opportunities for reaching and supporting women during this period.

V. Home Visits Targeting Higher-Risk Mothers or Newborns

Although the PNHV programs countries have tried to implement since the 2009 Joint Statement have aimed for *universal* home visits, in some settings a more *targeted* approach may be worth considering. For example, repeated home visits can be offered for very small newborns or for mothers and/or newborns otherwise at higher risk (e.g., those with adolescent mothers). Identification of those in need could be done through a range of possible strategies, including health facility-to-community referrals after institutional births and identification of at-risk mothers during pregnancy.

VI. Pre-Discharge PNC for Facility Births

In settings where a large proportion of births happen in hospitals or other health facilities, these contacts represent very important (and often missed) opportunities for:

- assessing the mother and newborn;
- providing counseling before discharge on maternal and newborn danger signs, key newborn and self-care practices, and subsequent routine preventive services (e.g., immunization and family planning); and
- ensuring that breastfeeding is well-established.

These contacts are also important for identifying mothers and babies at higher risk and helping to ensure appropriate follow-up of these cases—at the same health facility where the birth occurred or at a local health facility closer to where the mother and baby live (or with suitable CHWs, where available). Additionally, contact at this time should be used to ensure birth registration.

For *all* facility births, efforts should be made to take advantage of these opportunities. This should be understood as part of the standard of care for facility births. Programmatically, it makes sense to prioritize this strategic option in settings where most births happen in health facilities; in these settings, home visitation as a universal strategy may have less to offer. Improvement in this aspect of facility-based care is an important

component of recent efforts led by WHO to improve quality of facility-based maternal–newborn care, as is reflected in new standards of care recently released by WHO (2016).

In some settings—such as high-volume urban hospitals—high numbers of patients, staffing shortages and inadequate space may pose important challenges, requiring appropriate policy and management responses. Furthermore, in settings where it has become expected that the duration of stay for childbirth admissions is often only a few hours, families may need to be educated about the value of longer stays.

A strategy relying on provision of services through health facilities can only achieve high effective coverage if there are high levels of utilization of those facilities. So, for example, emphasizing pre-discharge assessment and counseling (after birth) can achieve high population-level health impact only in settings where a large proportion of births occur in health facilities. *Make use of any and all available platforms that have good reach.* Note that this principle applies to the other approaches listed here, not only to pre-discharge care.

VII. PNC at Peripheral Level (health centers, health posts, outreach clinics)

Many peripheral level health facilities do not offer 24/7 services, but they are generally able to provide routine schedulable services including postnatal follow-up. (They are also often an important source for antenatal care). This can include normal mother–newborn assessment and counseling, as well as special care for very small newborns and mothers–newborns otherwise at higher risk (for example, following referral from a hospital where the birth occurred). Depending on the setting, infant immunization visits may offer a good opportunity for counseling on family planning, breastfeeding, and other aspects of infant care.

VIII. Community Mobilization related to Maternal–Newborn Health

In settings where participatory women’s groups or other suitable initiatives of this kind are active, they may be effectively harnessed to mobilize community support, as well as to link communities with local health services to help better ensure needed care during the postnatal period. Such community mobilization efforts may also provide a good opportunity for health education messaging on danger sign recognition and response, essential newborn care, and other important postnatal issues.

IX. Mass Media and other Behavior Change Approaches

There have been many instances of either stand-alone maternal–newborn behavior change campaigns or the use of such approaches as complements to other program components. For many of the approaches listed above, other complementary communication channels can be used, including: teaching aids and printed materials to hand out to pregnant women and mothers; use of radio messaging; and others. There has also been recent program experience making use of mobile phone technology, for example with automated text messages on health topics (e.g., danger signs, care-seeking, newborn care, immunizations) that are appropriately timed based on the stage of pregnancy or the age of the newborn.

C. Rigorously Evaluating and Evolving Strategy

Based on a review of conditions in your setting and considering potentially useful approaches, you can work out an initial mix of approaches that may be feasible and effective. But, as a general rule, no plan survives contact with real-world delivery at scale entirely intact. So, begin to implement. Try it out. Devote adequate resources to monitor and evaluate your effort objectively and thoroughly. See what’s working well and what’s not. Then, based on your findings, make any necessary adjustments. This may require revisiting both your initial assumptions and original strategy. But with robust monitoring and evaluation, and readiness to make needed adjustments to ensure effectiveness, you will be well on the way to an effective program.

IV. Conclusions

In current maternal–newborn program efforts, considerable attention has been directed at the critical period around birth. This is an appropriate focus, given the high risk of bad health outcomes during this time. However, the days and weeks that follow are also a vitally important period during which good care practices, timely medical care, and other program efforts can not only improve likelihood of survival but also contribute to better outcomes of other kinds through care and services aimed at improving and/or addressing a variety of health issues, including: infant nutrition status, maternal fertility, morbidities of various kinds, maternal mental health, and infant socio-cognitive development.

Home visitation has been proposed as a way to achieve better outcomes during the postnatal period. Successful programs of this kind have been implemented in middle- and high-income countries for many decades. As discussed, however, the current global effort to increase use of PNHV has a more recent origin, in a demonstration project in rural Maharashtra state, India, in the 1990s and several follow-up cluster randomized control trials that tested variations on this model. It is evident from the published trials that—at least under certain conditions—such approaches can reduce risk of newborn death. On the strength of these trial findings, WHO and UNICEF issued a joint statement in 2009, endorsing this approach.

Certainly, to the extent that it is feasible to offer capable, conscientiously-delivered, home visitation, there is reason to anticipate considerable benefit from this service. However, what is feasible and what constitutes an optimal strategy will vary enormously by setting.

Compared to 10 to 20 years ago, when PNHV demonstration projects and randomized controlled trials were first conducted, there has been notable evolution in maternal–newborn services in many countries. Institutional delivery rates have increased. And there is new focus on the content and quality of care. Good postnatal care to mothers and newborns before discharge after birth is a critical need, and should be prioritized in country settings where most births now happen in health facilities. Other approaches are needed for populations where many births still happen at home.

The first days and weeks after childbirth is a period of high risk for both mothers and newborns. Sound programs and services that reach a large proportion of mothers and newborns can positively influence care practices and the timeliness of receiving any needed treatment for complications. Those responsible for such programs and services have a duty to ensure that the needs of the populations they serve are well met, working with the real-world opportunities and constraints they face. As much as we may prefer otherwise, there are no one-size-fits-all, off-the-shelf strategies to fully address these needs in all settings. This guidance document offers some initial considerations for ministries of health, country-level policymakers, program managers, and their partners to take into account as they design appropriate, strategic mixes of service delivery components to improve outcomes during the postnatal period and beyond. These considerations are intended to help them tailor strategy to the needs and conditions particular to their setting, so that they may achieve the greatest impact that is feasible.

Annex I: Home Visitation Trials & Quasi-Experimental Studies*

Study Title, Setting, Author & Date	Study Design & Endpoints	Intervention Content & Results
<p>SEARCH–Gadchiroli 39 intervention & 47 control villages, Gadchiroli district</p> <p>India (Bang 1999)</p>	<p>Quasi–experimental</p> <p>Neonatal mortality rate (NMR)</p>	<p>Intervention: Village health workers (VHWs) made home visits in 3rd trimester, on day of birth, and 7 more times over first month of life, assessing for illness. Traditional birth attendants (TBAs) trained in clean delivery practices; VHWs assisting TBAs in deliveries, including weighing newborns (NBs) and resuscitating non-breathing NBs. NBs weighing < 2000 g to receive 12 postnatal visits, with support for appropriate thermal care. Counseling on care practices. Cases of possible sepsis treated with antibiotics, including injectable gentamicin. Intensive supervisory oversight.</p> <p>Result: NMR 38% lower in intervention arm than in comparison arm (p < 0.001).</p>
<p>Projahnmo–Sylhet 24 clusters (480,000 population [pop]) Bangladesh (Baqui 2008)</p>	<p>Cluster randomized controlled trial (RCT)</p> <p>NMR, care practices</p>	<p>Intervention: Female CHWs (one per 4000 pop) identified pregnant women, made 2 antenatal (AN) home visits to promote birth preparedness and essential NB care, made postnatal (PN) home visits to assess NBs on days 1, 3, and 7, and referred or treated sick NBs (including administration of antibiotics).</p> <p>Result: Neonatal mortality 34% lower in intervention arm than in comparison arm (adjusted relative risk 0.66; 95% confidence interval [CI]: 0.47–0.93).</p>
<p>Shivgarh 39 villages (100,000 pop) India (Kumar 2008)</p>	<p>Cluster RCT</p> <p>NMR, care practices</p>	<p>Intervention: Four home visits (2 AN, 2 PN) with counseling on birth preparedness, clean delivery and cord care, thermal care (including skin-to-skin), breastfeeding (BF) promotion, and danger sign recognition. Supplemented by community meetings conducted by CHWs.</p> <p>Result: Improvements in birth preparedness, hygienic delivery, thermal care, and other elements of essential NB care were seen in intervention arm. Little change in care-seeking for danger signs. Compared with controls, NMR was reduced by 53% in the intervention arm (p < 0.0001).</p>
<p>Projahnmo2–Mirzapur 12 unions (300,000 pop) Bangladesh (Darmstadt 2010)</p>	<p>Cluster RCT</p> <p>NMR, care practices</p>	<p>Intervention: Four home visits (2 AN, 4 PN) with counseling on birth preparedness, essential NB care, and danger signs. Assessed for sick NBs. Facilitated referral.</p> <p>Result: Improved care practices. For NMR, adjusted hazard ratio at endline—0.87 (95% CI: 0.68–1.12).</p>

Study Title, Setting, Author & Date	Study Design & Endpoints	Intervention Content & Results
<p>Hala <i>Hala and Matiari sub-districts</i> (500,000 pop) Pakistan (Bhutta 2011)</p>	<p>Cluster RCT</p> <p>NMR, care practices</p>	<p>Intervention: Three main elements: 1) group education sessions for women of reproductive age; 2) home visits with counseling on essential NB care, minimum of 3 PN visits but encouraged for 4 additional PN visits; 3) TBAs in interventions clusters were trained on basic NB care, including NB resuscitation.</p> <p>Result: 1 in 4 NBs were reached with PNHVs. Key household behaviors for maternal and early newborn care improved, with the biggest changes occurring in care-seeking during pregnancy and for delivery, but not in referral or care-seeking for NBs. Intervention clusters had 15% lower NMR than comparison clusters ($p = 0.02$).</p>
<p>MaiMwana <i>Mchinji district</i> (185,000 pop) Malawi (Lewycka 2013)</p>	<p>Cluster RCT</p> <p>Infant mortality rate, care practices (exclusive BF) (implemented as a 2x2 factorial trial, with participatory women's groups)</p>	<p>Intervention: Five home visits (1 AN, 1 in the 1st week after birth, then 3 PN: at 1 month, 3 months and 5 months of age), counseling on BF and other NB/infant care practices.</p> <p>Result: 18% reduction in infant mortality (0.82, 0.67–1.00) and increase in exclusive BF.</p>
<p>Newhints <i>7 districts in Brong Ahafo region</i> (500,000 pop) Ghana (Kirkwood 2013)</p>	<p>Cluster RCT</p> <p>NMR, stillbirth rate, care practices</p>	<p>Intervention: Five home visits (2 AN, 3 PN) with counseling on essential NB care and danger signs, assessment of sick babies, referral of sick or low birth-weight (LBW) NBs. TBA, community and health facility sensitization.</p> <p>Result: Improved care-seeking for danger signs, birth preparedness and essential NB care practices. NMR 8% lower in intervention arm ($p = 0.41$).</p>
<p>Goodstart III <i>Umlazi township</i> (1,000,000 pop) South Africa (Tomlinson 2014)</p>	<p>Cluster RCT</p> <p>Care practices (especially exclusive BF), HIV-free survival</p>	<p>Intervention: Seven home visits (2 AN, 5 PN). LBW babies to receive 2 extra visits within the 1st week.</p> <p>Result: Increases in exclusive BF, care-seeking in the 1st week of life, infant weight, and length-for-age z-scores. There was no difference in HIV-free survival.</p>
<p>INSIST <i>6 districts in Lindi & Mtwara regions</i> (1,000,000 pop) Tanzania (Hanson 2015)</p>	<p>Cluster RCT</p> <p>NMR, maternal mortality rate, stillbirth rate, care practices</p>	<p>Intervention: Counseling during 5 home visits (3 AN, 2 PN) by community volunteers with emphasis on BF, hygiene, and identification and extra care of LBW babies. For LBW babies, 2 additional visits. Identification of LBW babies through foot size. Community and health facility sensitization.</p> <p>Result: Nearly two-thirds of women were reached by a volunteer during pregnancy and/or the early postnatal period, but only 20% of home births received a visit within 2 days of delivery. Coverage of key healthy behaviors and care-seeking significantly improved in the intervention arm; however, there was no evidence of a mortality impact in the intervention arm. Very marked secular increases in health facility deliveries during implementation of the trial, affecting intervention and control arms equally.</p>

Study Title, Setting, Author & Date	Study Design & Endpoints	Intervention Content & Results
UNEST <i>Iganga & Mayuge districts</i> <i>(70,000 pop)</i> Uganda (Waiswa 2015)	Cluster RCT Care practices	Intervention: Five home visits (2 AN, 3 PN), counseling on care practices and danger sign recognition. Sick NBs assessed and referred. Result: Better NB care practices in intervention arm (study was not powered to detect a mortality effect).
COMBINE <i>3 zones within SNNPR & Oromia regions</i> <i>(660,000 pop)</i> Ethiopia (Hailegebriel 2017)	Cluster RCT NMR after 1st day of life, care practices	Intervention: PN home visits by volunteers and paid health extension workers; counseled on essential NB care practices, assessed for danger signs, and referred—as necessary—for treatment of possible sepsis; treatment at health post level. Supplementary community mobilization activities. Result: Volume of possible sepsis cases treated equivalent to ~50% of expected incidence. Decline in mortality 17% greater in treatment arm than in control, but wide CI ($p = 0.33$). It was difficult to achieve and maintain high levels of home visitation.

Abbreviations & acronyms (table key): AN, antenatal; BF, breastfeeding; CI, confidence interval; LBW, low birth weight; NB, newborn; NMR, neonatal mortality rate; PN, postnatal; pop, population; RCT, randomized controlled trial; TBA, traditional birth attendant; VHWs, village health workers

*Note that, to varying degrees, all of the trials summarized above provided an intensity of support considerably greater than what could be expected with routine implementation at scale.

Annex II: Multi-Country Program Review

Rationale for the Review

Newborn mortality levels remain high in many low- and middle-income countries. Governments are told that research has conclusively demonstrated that home-based PNC reduces newborn mortality and that their health departments should design programs to deliver PNHV. While many have adopted policies to offer PNHVs, a smaller number of countries have made serious efforts to deliver them at scale and generally these programs have provided timely services to only a small percentage of the newborns they seek to serve. Why has this highly promoted global initiative been so difficult to implement at scale? This review attempts to characterize the challenges to delivering PNHV services and to offer guidance to make them more effective as part of a broader PNC programming strategy.

Background

From Research to Policy and Programs

Researchers, policymakers and program managers collaborate to develop effective public health interventions and then scale them up through health services. Research evidence that demonstrates impact is now normally a prerequisite for developing global recommendations and new programming. Current approaches to generating evidence prioritize rigorous methods and numbers we can believe in, but often fail to adequately account for feasibility of implementation at scale. Rigor is certainly important in research, but the inputs used during field trials often exceed the resources that governments can access when they take programs to scale. How can governments take a recommendation for a service delivery strategy such as PNHV—for which local context is so important—and implement it effectively at scale?

Global Efforts to Reduce Newborn Mortality

In a series of trials beginning in the mid-1990s (see **Annex I**), researchers demonstrated that PNHVs delivered using a specific schedule with defined content, accompanied by robust systems supports (e.g., close supervision) could reduce newborn mortality. A consensus emerged in the global newborn health community that PNHVs should be promoted globally as a strategy to reduce newborn mortality. In 2009, WHO and UNICEF issued a Joint Statement recommending that governments provide PNHVs to mothers and newborns. These recommendations have been reiterated in subsequent global guidance documents. Many countries have developed policy in support of PNHVs, while a smaller number have pilot-tested PNHV programs and then rolled them out at scale. Most countries attempting to implement PNHVs at scale have encountered performance challenges and not reached coverage levels needed to achieve meaningful impact on mortality.

A Global Review of Performance of PNHV Programming

The low performance of PNHV programming has led to concerns about the real-world feasibility of implementing the 2009 Joint Statement recommendations. We need to better understand what is required for effective implementation of PNHV programming if this strategy is to significantly contribute to reducing newborn (and maternal) mortality. Recognizing this need, a team of technical specialists from Save the Children's SNL program, WHO, UNICEF, USAID and USAID/MCSP conducted a review of country-level experience implementing PNHV programs at scale through government health services. The purpose of the review is to provide useful insights to policymakers and program managers to design and deliver home visitation programming *if they can meet conditions for effective delivery at scale*—and to help them identify and consider other options if they cannot.

Methods

The review team used a case study methodology for a light and rapid review that would nevertheless maximize rigor and validity. During the initial phase of the work, the team screened 14 countries to assess their suitability for inclusion in a second, more intensive phase. One or more key informants from each Phase I country completed a semi-structured questionnaire to provide information on efforts to implement PNHV in his/her country. Based on information gathered through the questionnaire and subsequent follow-up phone conversations and document review, the team prepared country profiles for most of the 14 countries. Criteria used to select countries for inclusion in Phase II included evidence of implementation at scale, delivery through the routine government health system, maturity of implementation at scale, availability of data on program performance, and diversity criteria (e.g., geography, implementation models).

Based on their potential to provide rich learning, Bangladesh, Ethiopia, India, Malawi, Nepal and Sri Lanka were selected for Phase II. During Phase II, the review team conducted an intensive review of these countries' experiences implementing home visitation programming during the antenatal and postnatal periods. Team members made in-country visits to interview key informants and reviewed available documentation and data.

Findings

Development of Policy on PNHV

While the Joint Statement directly catalyzed efforts in many countries to develop policy to provide PNHVs, other countries developed policy independent of the JS. Among the 75 countries included in the Countdown to 2015: A Decade of Tracking Progress for Maternal, Newborn and Child Survival report, 59 reported having a policy for PNHVs during the first week after childbirth.

Country-Level Experience Piloting PNHV Programming

Bangladesh, Malawi, Nepal and Uganda have documented pilot tests of home visit packages. The pilots achieved low to moderate coverage of early PNHVs, supported by intensive inputs and cadres (including non-government or volunteer care providers) that can be difficult for governments to support and sustain at scale. All pilots included multiple visits during pregnancy, in addition to postnatal visits. Coverage of pregnancy home visits was notably higher than early PNHVs and appears to be more feasible to implement.

Coverage of PNHV at Scale

The team reviewed available data that describe coverage of PNHVs delivered at scale in Ethiopia, Ghana, India, Indonesia, Malawi, Myanmar, Nepal, Pakistan, Rwanda, Sri Lanka and Uganda. Among these countries, only Sri Lanka has documented high coverage of PNHVs at scale and sustained this performance over a number of years. Most countries adopted ambitious PNHV schedules but were subsequently unable to achieve the level of coverage at scale that would meaningfully impact newborn mortality. Table 1 provides a summary of the most rigorous available data on PNHV coverage at scale.

Table 1: Most rigorous available data on PNHV coverage

Country (HF delivery rate – past 5yrs)	PNC coverage (facility and home) within 2 days of birth for mothers		For home births, timing of any PNC for the mother in the 1st 2 days after birth	PNC coverage (facility and home) within 2 days of birth for newborns		For home births, timing of any PNC for the newborn in the 1st 2 days after birth	Source
	Facility births	Home births	Provider type	Facility births	Home births	Provider type	
Ethiopia (16.4%)	48.4%	1.0%	<4hrs: 0.5%, 4-48 hrs: 0.5% physician/midwife-0.5%, HExW-0.4%	--	--		Mini DHS 2014
Ghana (73%)	93.4%	45.0%	<4hrs: 30.9%, 4-48 hrs: 14.0% TBA-31.5%, nurse-midwife-7.2%, MD-1.6%, comm. health officer/ nurse-1.2%	24.9%	16.4%	<4hrs: 6.5%, 4-48 hrs: 10.0% TBA-8.6%, physician-4.8%, nurse-midwife-2.0%, comm. health officer/ nurse-0.2%	2014 DHS
India (78.7% – last 3 yrs)	46.3%	13.1%		39.2%	13.1%		2014 RSOC survey
Indonesia (63.2%)	89.2%	60.1%	<4 hrs: 36%, 4-48 hrs: 24% Nurse/ midwife or village midwife-52.9%, TBA-6.5%, physician-0.4%, Ob/Gyn-0.2%	53.3%	35.9%	<4 hrs 20.5%, 4-48 hours 15.4% Nurse/ midwife or village midwife-29.4%, TBA-6.2%, physician-0.2%, Ped-0.1%	2012 DHS
Malawi (88.9%)	81.5%	25.4%		88.4%	28.1%	<i>PNC “visits” (not including @ birth) same day-7.7%, following day-3.0%. Of 1st PNC visits within 1 wk (for those born at home) 72.3% at HF; providers: MD-66%, TBA-20.9%, CHW-9.1%, community MW-4%</i>	2014 MICS
Myanmar (37.0%)	89.3%	56.2%	<4 hrs: 29.8%, 4-48 hrs: 26.4% physician/nurse/ midwife-33.1%, TBA-12.2%, auxil midwife-5.2%, CHW-0.1	37.5%	35.5%	<4 hrs: 19.0%, 4-48 hrs: 16.5% physician/nurse/MW-19.9%, TBA-12.0%, auxil midwife-3.3, CHW-0.2%	2016 DHS

Country (HF delivery rate – past 5yrs)	PNC coverage (facility and home) within 2 days of birth for mothers		For home births, timing of any PNC for the mother in the 1st 2 days after birth	PNC coverage (facility and home) within 2 days of birth for newborns		For home births, timing of any PNC for the newborn in the 1st 2 days after birth	Source
	Facility births	Home births	Provider type	Facility births	Home births	Provider type	
Nepal (36.9%) (55.2%)	87.3%	11.3%	<4 hrs: 8.3%, 4-48 hrs: 3.0% HA/AHW/ANM-6.2%, MCHW/VHW-2.1%, FCHV-2.1%, physician-0.9%	56.5%	9.6%	<4 hrs: 5.9%, 4-48 hrs: 3.0% HA/AHW-4.2%, MCHW/VHW-1.8%, FCHV- 2.8%, physician-0.7% <i>MICS: not including contact at birth, among home births, 2.3% received PNC on date of birth, 1.4% over the next 2 days</i>	2011 DHS 2014 MICS
Pakistan (48.2%)	84.7%	31.7%	<4 hrs: 29.6%, 4-48 hrs: 2.1% TBA-26.2%, physician/nurse/ midwife- 5.3%	57.9%	25.2%	<4 hrs: 22.2%, 4-48 hrs: 2.1% ANM-18.1%, physician/nurse/ midwife-6.8%	2013 DHS
Rwanda (90.7%)	44.2%	30.6%	<4 hrs: 23.5%, 4-48 hrs: 7.0% MD/nurse/med asst-27.1%, midwife- 1.5, CHW-0.2%	19.3%	19.0%	<4 hrs: 12.6%, 4-48 hrs: 6.4% MD/nurse/med asst-16.8%, midwife-0.9%, CHW- 2.2%	2015 DHS
Uganda (57.4%)	48.9%	10.0%	<4 hrs: 5.5%, 4-48 hrs: 4.5% TBA-5.7%, physician/nurse/ midwife- 3.7, nurse's aide/VHT-0.5%, med asst- 0.2%	14.5%	5.4%	<4 hrs: 1.3%, 4-48 hrs: 4.1% TBA-1.3%, physician/nurse/ midwife-3.8%, nurse's aide/VHT-0.1%, med asst-0.3%	2011 DHS

Text in italics refers to data from UNICEF Multiple Indicator Cluster Surveys (MICS)

Implications of Survey Findings (by country)

Across the countries included in this review, generally there was a lack of sound routine data on visit coverage; none of the countries in the table generate reliable, independent (i.e., non-HMIS) data to measure coverage of early PNHV on a periodic basis. Although fewer than half of the countries have reliable data of any type that directly measure coverage of PNHV, available data can be carefully interpreted to draw conclusions about coverage levels in all countries.

In table 1 and in the summary below we focus particularly on home births, assuming that for institutional births there are good opportunities available to assess the mother and newborn and provide counseling and health education before discharge (though ensuring such service certainly warrants more serious programmatic attention than it has been receiving till now). In the case of home births, if they make an early postnatal visit to a health facility, this period can certainly provide a good opportunity to address any particular needs of the mother and newborn. However, PNC home visitation programs assessed under this review attempted to ensure PNC home visits by CHWs, with particular emphasis on first visits within the first 48 hours after birth. To varying degrees these programs have given special priority to home births.

If we are attempting to assess effectiveness of program approaches, it is important to differentiate place of care for specific services of interest. Specifically, if we are interested in “postnatal care”, it is helpful to be able to clearly differentiate between services provided at the health facility and those provided during home visits. However, the way the questions are posed and the data analyzed in DHS and most other national surveys does not allow for such disaggregation. For that reason, in the table and in the text summary below, we differentiate by timing of this reported contact, assuming that most of the PNC contacts reported within four hours of birth refer to episodes of care that began during labor and delivery or immediately post-delivery. The MICS survey structures its questions and analysis in a way that allows for differentiation (see data for the Malawi survey in the table above).

From the data, we can see that:

- In **Ethiopia**, the institutional delivery rates has been rapidly rising, though it remains low by international standards. Over the two-year interval ending 2014, it was up to 16.4%. Over that period, among home births, essentially none (i.e. only 1%) reported having received any PNC over the two days following the birth (whether at health facility or at home).
- In **Ghana**, about three quarters of births take place in health facilities (73%). Among home births, just under a third (30.9%) report receiving any postnatal care for the mother within the first four hours after birth. Presumably, most of these reported contacts are an extension of birthing care. Another 14% of those delivering at home report first receiving PNC over the period from 4-48 hours after birth. The main category of provider of PNC following home births is TBAs.
- In **India**, about four out of five births (78.7%) are in health facilities. Among home births, 13% report receiving PNC within two days of birth. We do not have access to data allowing more finely disaggregated timing of visit.
- In **Indonesia**, almost two thirds of births (63.2%) are in health facilities. Of home births, 60% report some postnatal care for the mother over the first two days of life: 36% within the first four hours and a further 24% from 4-48 hours. The reported proportions for PNC for the newborn are somewhat lower. Nurses, midwives and village midwives are the main providers, followed by TBAs.
- In **Malawi**, about 90% of births are in health facilities. Among the small number of home births, 25% report receiving PNC for the mother within two days of birth. For PNC of the newborn— excluding care given at birth—7.7% of those born at home were reported to have received PNC on the day of birth, and a further 3% on the following day. Such care was mainly at the health facility (72.3%). Physicians were the main category of health worker providing PNC over the first week of life (66%); CHWs accounted for 9.1% of such PNC.

- In **Myanmar**, most births happen at home—37% in health facilities. For home births, just over half (56.2%) report receiving PNC for the mother over the first two days of life, with about half of that care received within the first four hours after birth. The reported proportions for PNC for the newborn are slightly lower. The main providers of such PNC are physicians, nurses and midwives, followed by TBAs.
- In **Nepal**, the institutional delivery rate has been rapidly increasing. For the two years ending 2014, 55% of births were in health facilities (MICS). For about one in ten home births, PNC within 48 hours of birth was reported (DHS). About two thirds of these reported episodes of care were within 4 hours of birth. The main categories of health worker providing this care were health assistant/ AHW/ ANM. Less trained health auxiliaries (MCHWs, VHWs) and FCHVs both reached 2-2.5% of home births with PNC within 48 hours of birth.
- In **Pakistan**, half of births occur in health facilities. Among home births just under one third report receiving PNC for the mother with 48 hours of birth (and a slightly smaller proportion, receiving PNC for the newborn). Almost all this reported care is within the first four hours after birth, with the main categories of providers being TBAs and ANMs.
- In **Rwanda**, nine births in ten occur in health facilities. Among the small proportion giving birth at home, 30.6% report receiving PNC for the mother within 48 hours of birth (about one third fewer, for the newborn). Most such reported care is within the first four hours after birth, with physicians, nurses and medical assistants as the main providers. For home births reporting receiving PNC for the newborn within 48 hours, 2% report that such care was provided by a CHW.
- In **Uganda**, half of births are in health facilities. Among home births only one in ten are reported to receive PNC for the mother within 48 hours (5% for PNC for the newborn). For PNC for the mother, about half of such care is reported within the first four hours, with TBAs as the main source of PNC over the first 48 hours, followed by physicians, nurses and midwives. CHWs (VHTs) are reported to provide 0.1% of such care. For newborns, physicians, nurses and midwives are reported as the main source.

For reported “postnatal care” for the mother, received within 48 hours of birth, in all of the surveys summarized above, the majority of episodes were within four four hours of birth and most are likely to refer to care provided during an episode of care beginning during labor or delivery or shortly thereafter. For all of the surveys other than the Uganda DHS, this was also the case for PNC for the newborn. In the Uganda newborn, among home births 1.3% reported PNC for the newborn with four hours of birth and 4.1% during the period 4-48 hours after the birth.

Focusing on PNC received between four and 48 hours after birth (among home births), we can assume that a larger proportion of such care represent episodes of care distinct from assistance around the time of delivery. From the data summarized above, most such care is provided within health facilities by professional health workers or health auxiliaries, though some such care appears to be provided at community level. However community health workers are not a significant source of such care in any of the surveys.

Among the countries summarized here, those that have reached the highest proportion of mother-newborns, having delivered at home, with PNC over the 4-48 hour period are:

- **Ghana** (14% with PNC for mothers and 10% with PNC for newborns)
- **Indonesia** (24% with PNC for mothers and 15.4% with PNC for newborns)
- **Myanmar** (26.4% with PNC for mothers and 16.5% with PNC for newborns)

In Ghana, most such PNC was provided by TBAs, presumably mostly in the home of the mother and newborn. In Indonesia, village midwives, nurse-midwives, and TBAs were the main sources of such care. One could presume that much of it was provided in the home or in small community-based maternity facilities. In Myanmar, professional cadres were the main source, followed by TBAs. So, even in the higher performing countries, relatively few mothers and newborns were reached, and little evidence that this service is actually being provided by CHWs.

Lessons on Factors Affecting Performance of PNHV Programs

The team interviewed multiple stakeholders from all Phase II countries to obtain information on factors that they felt affect performance of home visitation. Interview results made it clear that a strong health system is a prerequisite for effective delivery of PNHVs at high coverage. In addition to this general requirement for program effectiveness, several key performance factors specific to delivering PNHVs were also identified. The team recommended:

- Developing policy to keep mothers and newborns in facilities for ≥ 24 hours post-delivery
- Strengthening the quality and coverage of PNC prior to discharge for facility deliveries
- Developing a schedule of PNHVs that is feasible and that may be supported by facility-based PNC
- Positioning PNHVs as part of a life-course continuum of care rather than as a stand-alone service
- Focusing on creation of client demand for PNHVs by identifying and raising awareness about tangible benefits of the service
- Developing a system for birth notification to the CHW cadre performing PNHVs and monitoring its use
- Ensuring that the cadre providing PNHVs has adequate access to transport to visit clients' homes

Conclusions

All countries that have implemented PNHVs at scale have made serious efforts. However, given the low visit coverage of PNHVs in almost all countries, especially during the first days following childbirth, it is unlikely that these programs are achieving any significant, population-level impact on newborn mortality risk. Though effective under adequately supported conditions, for many countries the home visitation protocol recommended in the 2009 Joint Statement may not be feasible, implemented at scale; it is clear that the recommendation needs to be adapted to country contexts, a process that several countries have already undertaken.

The overarching conclusion of this review is that a country considering the introduction of PNHV services should seriously study feasibility and context when determining whether and how to provide such services to an adequate standard. Countries should be encouraged to view PNC programming holistically and be provided with methods and tools that allow them to develop a flexible, tailored approach as they consider the incorporation of PNHVs (or other related strategies) into their health services.

The review team drew five further conclusions from this review:

- *Variation in implementation models:* Countries have introduced PNHVs through a variety of modalities, some differing from the recommendations of the 2009 Joint Statement. For example, health workers conducting PNHVs in some countries have been assigned case management functions—such as administration of antibiotics and use of bag and mask for asphyxiated newborns—that are not addressed in the 2009 Joint Statement.
- *Low coverage at scale:* Among countries included in the review, only Sri Lanka has documented high coverage of PNHVs at scale and sustained this performance over time. Most countries adopted ambitious PNHV visit schedules but subsequently have been unable to achieve visit coverage at scale that would meaningfully impact newborn mortality.
- *Variation in country response to low performance of home visitation programming:* Some countries have ceased efforts to provide PNHVs following poor results, while others have continued with PNHV programming despite low performance. Still other countries have responded to disappointing performance by modifying their strategies for providing PNC and home visitation, thus recognizing the importance of learning and adaptation.

- *Limited emphasis on service delivery and quality:* To date, country-level health officials have placed greater emphasis on details of the visit schedule and identifying which cadre is to provide the service. Less emphasis has been directed to supporting the *delivery* of PNHVs and ensuring their *quality*. Increased attention to delivery and quality would benefit newborns and conform to WHO’s current focus on strengthening the quality of care at childbirth.
- *Health system requirements:* Effective delivery of PNHVs clearly requires the support of a strong primary health care system. Many of the factors that stakeholders identified as being crucial for the effective delivery of PNHVs also represent characteristics of a well-run health care system. It may not be possible to achieve desired results at scale through PNHVs—at least at the intensive level of schedule recommended in the 2009 Joint Statement—without a strong primary health care system.

Recommendations

- *Provide operational guidance to countries.* Countries require operational guidance to help them determine how PNHVs might best fit into their mix of services and whether they have the resources to effectively deliver such services universally at scale and at adequate coverage. A country’s decisions on whether and how to introduce PNHVs should be informed by available resources, the local context, and the “fit” of PNHVs with other related services, notably PNC provided by professional health workers.
- *Prioritize pre-discharge PNC.* Countries should prioritize the provision of high-quality pre-discharge PNC to all babies born in facilities and their mothers. Many countries and facilities miss the opportunity to provide this critical service. Provision of pre-discharge PNC would reduce the need for very early PNHVs—visits that are very difficult to deliver in most countries.
- *Encourage and facilitate local adaptation of recommendations.* Countries should consider schedules and approaches to implementing PNHVs beyond the provisions of the 2009 Joint Statement and should not interpret its recommended schedule of PNHVs as an inflexible mandate. For example, some countries that have not been successful in achieving adequate coverage of PNHVs have adapted approaches to providing PNC that include: 1) greater focus on facility-based postnatal contacts; 2) increased emphasis on household-level contacts during pregnancy to promote key postnatal practices; and 3) targeting PNHVs to high-risk mothers and newborns.

The full report for this review can be found at: <http://www.healthynewbornnetwork.org/resource/postnatal-care-home-visit-a-review-of-the-current-status-of-implementation-in-five-countries/>

References

- Bang AT, Bang RA, Baitule SB, Reddy MH, Deshmukh MD. 1999. Effect of home-based neonatal care and management of sepsis on neonatal mortality: Field trial in rural India. *Lancet*. 354(9194): 1955–1961.
- Baqui AH, El-Arifeen S, Darmstadt GL, et al. 2008. Effect of community-based newborn-care intervention package implemented through two service-delivery strategies in Sylhet district, Bangladesh: A cluster-randomised controlled trial. *Lancet*. 371(9628): 1936–1944.
- Bhutta ZA, Soofi S, Cousens S, et al. 2011. Improvement of perinatal and newborn care in rural Pakistan through community-based strategies: A cluster-randomised effectiveness trial. *Lancet*. 377(9763): 403–412.
- Darmstadt GL, Choi Y, Arifeen SE, et al. 2010. Evaluation of a cluster-randomized controlled trial of a package of community-based maternal and newborn interventions in Mirzapur, Bangladesh. *PLoS One*. 5(3): e9696.
- Darmstadt GL, Walker N, Lawn JE, Bhutta ZA, Haws RA, Cousens S. 2008. Saving newborn lives in Asia and Africa: Cost and impact of phased scale-up of interventions within the continuum of care. *Health Policy Plan. Mar; 23(2):101–117*.
- Hailegebriel TD, Mulligan B, Cousins S, et al. 2017. Effect of newborn infection management at health posts on neonatal mortality: A cluster randomized trial in rural Ethiopia. *Glob Health Sci Pract*. June 2017.
- Hanson C, Manzi F, Mkumbo E, et al. 2015. Effectiveness of a home-based counselling strategy on neonatal care and survival: A cluster-randomised trial in six districts of rural southern Tanzania. *PLoS Med*. Sep 29;12(9): e1001881.
- Kirkwood BR, Manu A, Ten Asbroek AH, et al. 2013. Effect of the Newhints home-visits intervention on neonatal mortality rate and care practices in Ghana: A cluster randomised controlled trial. *Lancet*. 381(9884): 2184–2192.
- Kumar V, Mohanty S, Kumar A, et al. 2008. Effect of community-based behaviour change management on neonatal mortality in Shivgarh, Uttar Pradesh, India: A cluster-randomised controlled trial. *Lancet*. Sep 27;372(9644):1151–1162.
- Lewycka S, Mwansambo C, Rosato M, et al. 2013. Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): A factorial, cluster-randomised controlled trial. *Lancet*. May 18; 381(9879): 1721–1735.
- Maternal and Child Health Integrated Program (MCHIP) and Save the Children. 2012. *Postnatal Care Home Visits A Review of the Current Status of Implementation in Five Countries*. MCHIP and Save the Children: Washington, D.C.
- Sitrin D, Guenther T, Murray J, Pilgrim N, Rubayet R, Ligowe R, et al. 2013. Reaching mothers and babies with early postnatal home visits: The implementation realities of achieving high coverage in large-scale programs. *PLoS One*. 8: e68930.
- Sitrin D, Guenther T, Waiswa P, et al. 2015. Improving newborn care practices through home visits: Lessons from Malawi, Nepal, Bangladesh, and Uganda. *Glob Health Action*. Mar 31; 8: 23963.

- Tomlinson M, Doherty T, Ijumba P, et al. 2014. Goodstart: A cluster randomised effectiveness trial of an integrated, community-based package for maternal and newborn care, with prevention of mother-to-child transmission of HIV in a South African township. *Trop Med Int Health*. 19(3): 256–266.
- Waiswa P, Pariyo G, Kallander K, et al. 2015. Effect of the Uganda newborn study on care-seeking and care practices: A cluster-randomised controlled trial. *Glob Health Action*. 8: 24584.
- WHO. 2015. *Caring for Newborns and Children in the Community: Planning Handbook*. WHO: Geneva.
- WHO. 2012. *Caring for the Newborn at Home: A Training Course for Community Health Workers*. WHO: Geneva.
- WHO. 2012. *Informal Meeting on Provision of Home-Based Care to Mother and Child in the First Week after Birth: Meeting Report*. WHO: Geneva.
- WHO. 2014. *WHO Recommendation on Community Mobilization through Facilitated Participatory Learning and Action Cycles with Women's Groups for Maternal and Newborn Health*. WHO: Geneva. Available at: http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/
- WHO. 2013. *WHO Recommendations on Postnatal Care of the Mother and Newborn*. WHO: Geneva. 2013.
- WHO. 2016. *Standards for Improving Quality of Maternal and Newborn Care in Health Facilities*. WHO, Geneva.
- WHO/UNICEF. 2009. *WHO/UNICEF Joint Statement: Home Visits for the Newborn Child—A Strategy to Improve Survival*. WHO: Geneva.

