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THE BEHAVIOR CHANGE FRAMEWORK:

A template for accelerating the impact of behavior change
in USAID-supported MCH programs in 24 priority countries

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Introduction

The Behavior Change Framework will help mainstream behavior change activities in the global health agenda for Ending Preventable Child and Maternal Death (EPCMD) by identifying the behavior changes that can have the highest impact on mortality reduction.

Overarching Objective: Accelerate in-country, sustainable population-level behavior change at the individual, family, community and institutional level to scale up demand for and use of key reproductive, maternal, newborn, and child health interventions and practices.

The Behavior Change Framework Development

A process of identification of key “accelerator” behaviors began in June 2013 with the Population-Level Behavior Change Evidence Summit for Child Health and Development. The summit, which examined the evidence for effective behavior change interventions, was followed by a series of consultations among experts within different health areas. The process was guided by the need to:

- Identify behaviors with the highest potential for impact on mortality reduction.
- Establish indicators/outcomes for these behaviors that can be monitored and evaluated.
- Implement behavior change for these behaviors with evidence-based tools and interventions.

As of April 2015, each technical area was reviewed and updated.

Definition of “accelerated behaviors” and criteria for consideration: Accelerator behaviors are priority behaviors for programming because they have the highest potential to hasten the decline of child and maternal deaths. They are selected among other behaviors that contribute to ending preventable deaths because they have low uptake (e.g., low oral rehydration salts [ORS] use), yet impact a major cause of child and/or maternal mortality across the continuum of care/lifecycle (e.g., iron tablet consumption during pregnancy, postnatal care-seeking).

Selecting accelerator behaviors does not mean that support for other behaviors that contribute to mortality decline should be diminished. It is assumed that efforts to maintain and improve all relevant behaviors will be continued.

Some additional considerations for choosing accelerator behaviors for programs are:

- A behavior that may influence one or more other behaviors that are direct or underlying causes of mortality
- A behavior that could be cross cutting or integrated across multiple technical areas
- A behavior that is measurable and feasible to track over time (note: if there are no data currently available, then an actionable plan for data collection should be developed)

“Related behaviors” contribute to improving the enabling environment to effectively carry out the accelerator behavior and may be bundled with other accelerator behaviors.

Accelerator Behavior Index

	Page
1. MALARIA: Caregivers recognize symptoms of malaria and seek prompt diagnosis and appropriate care.	4
2. DIARRHEA: Caregivers provide appropriate treatment for children at onset of symptoms.	6
3. PNEUMONIA: Caregivers seek prompt and appropriate care for signs and symptoms of acute respiratory infection (ARI).	8
4. IMMUNIZATIONS: caregivers seek full course of timely vaccinations for infants.	9
5. WATER SANITATION AND HYGIENE (WASH): Handwashing with soap at critical times (after defecation, after changing diapers and before food preparation and eating.	12
6. HEALTHY TIMING AND SPACING OF PREGNANCIES (HTSP): After a live birth, women use a modern contraceptive method to avoid pregnancy for at least 24 months (resulting in approximately three years between births)	15
7. NUTRITION: Early initiation (within one hour) and exclusive breastfeeding for six months after delivery	19
8. MATERNAL: Pregnant women attend antenatal care and attend facilities for delivery to reduce preventable maternal deaths	22
9. NEWBORN: Seek prompt and appropriate care for signs and symptoms of newborn illness to reduce preventable newborn deaths.	25
10. PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT): Active demand at household level for identification and treatment of all HIV-infected pregnant women..	27

Accelerator Behaviors, Related Behaviors and Interventions by priority health area

1. MALARIA

Accelerator Behavior: Caregivers recognize symptoms of malaria and seek prompt diagnosis and appropriate care.

Related Behavior: Accelerate the demand for and appropriate use of malaria-related products and services.

Suggested Intervention:

- (1) Train for self-care, care giving, care seeking for malaria episodes to prevent illness, deaths and other severe outcomes of malaria disease.
- (2) Train care providers on interpersonal communication and community mobilization skills for preventive actions, adherence to diagnosis and treatment.
- (3) Engagement with private sector and professional associations to improve interpersonal communication between private providers and the patients who seek malaria care in the private sector.
- (4) Educate patients and care providers about measures that reduce social costs of seeking malaria care (e.g., waiting hours, operating hours, transportation issues).

Indicators:

- Percentage of children under 5 years old with fever in the last two weeks who had a finger or heel stick to test for malaria, by background characteristics (e.g., age, residence, region, mother's education, and wealth quintile).
- Percentage of children under 5 years old with fever in the last two weeks for whom advice or treatment was sought, by background characteristics (age, residence, region, mother's education, and wealth quintile).
- Among children under 5 years-old with fever in the last two weeks, the percentage that received artemisinin-based combination therapy (or other appropriate treatment), by background characteristics (age, residence, region, mother's education, and wealth quintile).

Supporting evidence:

Evidence Summit Conclusions on Malaria from the Peer Reviewed Articles:

- a.** *A systematic follow-up reminder to health workers after on-the-job professional training can help change and sustain malaria care providers' behavior, operating at the action and maintenance stages of behavior change.*

A cluster-randomized controlled trial of an intervention to improve health worker malaria case-management was implemented in Kenya. Health workers were trained and subsequently sent text messages with reminder information about artemether-lumefantrine (AL). These considerations resulted in sending 2 messages per day (9:00 a.m. and 2:00 p.m.) for five working days (Monday to Friday), resulting in a total of 10 different malaria messages weekly. The findings showed significant improvements in correct AL management, which included correct dosing and counseling, both immediately after the intervention (November 2009) and six months later (May 2010), as compared to baseline data.^[i] Health workers said being kept "up to date" was an important factor influencing practice.

A similar study in Tanzania was carried out to evaluate short-term effects of a one-to-one educational intervention. The intervention aimed to improve the private sector's practices, compliance and performance in using the national treatment guidelines for malaria and other common childhood illnesses. The study showed a significant impact on prescribing and dispensing practices of drug stores for some common childhood illnesses. The training took place one month after the baseline data was collected, and endline data was collected eight months after the training. Results showed about 90 percent (n=18) of shops prescribed to clients the approved first-line anti-malarial drug for uncomplicated malaria (sulfadoxine-pyrimethamine), as compared to only 55 percent (n=11) of the control shops.^[ii]

Similarly, a low-cost outreach educational program in Kenya aimed to improve the private sector's compliance with malaria guidelines. After training and providing job aid to districts' wholesalers, results showed that 32 percent of shops receiving job aids prescribed the approved first-line drug, sulfadoxine-pyrimethamine, as compared to only 3 percent of the control shops.^[iii]

- b.** *Community interpersonal communication is effective in increasing the uptake of malaria prevention and treatment.*

A study in Burkina Faso involved training a core group of mothers and supplying community health workers with anti-malarial drugs specially packed in age-specific bags and containing a full dose of treatment.^[iv] Two

to twenty mothers formed the core group, depending on the size of the village. A baseline knowledge, attitudes, and practices survey was conducted pre- and post-intervention. The proportion of mothers seeking help from anyone in the village (primarily a community health worker) for their child's malaria episode increased from 21 percent at baseline to 54 percent at the end of the study. In addition, use of chloroquine and paracetamol for treatment rose from 25 percent to 46 percent. In another study, 12 health centers were selected in Burkina Faso. These centers served an area with a population of about 75,000 people in 57 villages. . Four health centers were assigned to community promotion in addition to intermittent preventive treatment for pregnant women using sulfadoxine pyrimethamine (IPTp-SP). The other eight were randomly allocated to either IPTp-SP (intervention) or weekly chloroquine (control). The promotional campaign resulted in a major increase in IPTp-coverage, with two-thirds of women at delivery having received more than two doses of SP. Of the women who were served by the four centers where promotion occurred, the percentage of women who received at least two doses was significantly higher, 70 percent versus 49 percent.^[v]

- c. *Easy-to-read pictorial images in addition to health worker educational messages can be effective in increasing dosing compliance for malaria in the settings where illiteracy is high.*

A comparative study in Nigeria examined a group of patients who received chloroquine syrup only, a second group that received the syrup with provider's verbal instruction and a third group that received the chloroquine syrup with both provider's verbal instruction and a pictorial insert explaining the doses. Results showed the third group had the highest level of compliance to the medication regimen.^[vi] There was a significant correlation ($p < 0.001$) between full compliance, improvement and time for improvement of the condition. The pictorial insert was sufficient to explain dosing to patients with limited primary education who may not understand use of age or weight in drug dispensing.

- d. *Improving referral advice in the community can be a powerful complement to other malaria case management strategies.*

A Tanzanian study compared the clinical course of illness and time taken to reach a hospital with a concurrently conducted study of an intervention that emphasized rapid referral of a group of pediatric patients admitted to the same hospital whose parents followed routine behavior.^[vii] The intervention group had a pre-referral treatment of rectal artesunate and received messages from health professionals that stressed the importance of rapid referral. The most relevant findings were that parents of sick children from the intervention study transferred their children to the hospital following the advice they were given, but they were only somewhat faster than the parents in the control group. Overall, there was about a day's delay between the two groups in the average time to reach hospital (18 hours vs. 51 hours, $p < 0.0001$). Among those patients who were admitted after 6 hours, the delay averaged 53 hours: 82 hours in pediatric patients versus 29 hours in patients from the intervention ($p < 0.0001$).

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2. DIARRHEA

Accelerator Behavior: Caregivers provide appropriate treatment for children with diarrhea at onset of symptoms.

Related Behavior:

- (1) Caregivers prepare home-based treatment (oral rehydration therapy [ORT]) or seek care and treatment (ORS and zinc) from a provider.
- (2) Public and private providers prescribe and/or recommend appropriate treatment (ORT or low-osmolarity ORS and zinc, with antibiotics used only for bloody stools).
- (3) Caregivers continue feeding (or increase breastfeeding) during and after episode.
- (4) Caregivers fully adhere to treatment guidelines.
- (5) Increase adoption of preventive behaviors including: rotavirus and measles vaccination, handwashing with soap (HWS), safe drinking water and improved sanitation, exclusive breastfeeding, and vitamin A supplementation.

Suggested Intervention:

- (1) Ensure access to affordable, high-quality treatment in both the public and private sectors.
- (2) Creation of a conducive and supportive policy and regulatory environment for treatment, including advocating that zinc be available over the counter (in countries where it may only be dispensed by prescription).
- (3) Support sustained demand for ORS and zinc, including teaching caregivers when and where to seek treatment.
- (4) Improve the knowledge and skills of public and private providers to promote and deliver appropriate treatment and care.

Indicators:

- Percentage of children under age 5 who had diarrhea in the two weeks preceding the survey and received ORT/ORS in conjunction with zinc.
- Possible indicator (not yet standard for Demographic and Health Surveys [DHS]): Percentage of children under age 5 who had diarrhea in the preceding two weeks who were given the correct amount of zinc for age for a full course of treatment (at least 10 days) along with ORT/ORS.

Supporting evidence:

The mortality effect of appropriate treatment for diarrheal disease consisting of ORT or ORS- combined with zinc is supported by a body of strong evidence. However, use of and compliance with treatment remain low, despite the relatively low purchase cost of these treatments and the ability to make ORT at home. A systematic review conducted in 2010 of 157 ORS studies used current coverage rates to estimate that if coverage of ORS were increased to 100 percent, diarrhea-related mortality could be reduced by 93 percent.^[i] Zinc treatment for diarrhea has proven to decrease the duration and severity of diarrhea episodes, reduce diarrhea mortality by 23 percent^[ii] and decrease the likelihood of future recurrences for up to three months following treatment.^{[iii][iv]}

In order to effectively influence caregiver and health care provider behaviors to increase the use of appropriate treatment for childhood diarrhea, it is essential that formative research be undertaken to identify specific barriers to care seeking and treatment adherence. For example, a 2013 study found that caregivers in Kenya and India had positive perceptions of ORS, but they had even higher positive perceptions of antibiotics as the strongest medicine for diarrhea treatment. This study also showed that most caregivers believed that ORS would help stop diarrhea, as opposed to prevent dehydration.^[v] Another 2013 study on the perceptions of zinc in Kenya identified that a majority of caregivers who had given zinc had not completed the full treatment course. The study explored some potential reasons behind this including caregiver reports that providers had not recommended the full treatment course and that other treatments were also being concurrently provided (antibiotics and antimotilities).^[vi] A behavior change program that aims to achieve the accelerator behavior for diarrhea treatment in this context would therefore need to design program messages around these prevalent practices and with an understanding of current behaviors.

A good example of how this can be successful is the Point-of-Use Water Disinfection and Zinc Treatment (POUZN) Project, which successfully used a multi-pronged approach to increase provider recommendations of and caregiver use of ORS/ORT and zinc while also decreasing inappropriate recommendation and use of antibiotics for appropriate diarrhea treatment. In addition to provider training and detailing in many countries, a demand generation approach was adapted to each country's specific context. Mass media campaigns (using national television and radio as well as community radio partners) were used to increase awareness of a broad

message while promotional and educational materials adapted to local knowledge and literacy levels for use in community-based interpersonal communication activities helped communities tackle local barriers. These behavior change strategies (implemented in four African and Asian countries) were successful in increasing recommendation and use of appropriate diarrhea treatment.^[vii] Exposure to mass media messages in particular was shown to be a key determinant of zinc and ORS use.

[i] Munos M, Fischer Walker C.L., Black R.E. (2010). The effect of oral rehydration solution and recommended home fluids on diarrhea mortality. *Int J Epidemiol*; 39(1): i75–i87.

[ii] Fischer Walker CL and Black RE (2010). Zinc for the treatment of diarrhoea: effect on diarrhoea morbidity, mortality and incidence of future episodes. *Int J Epidemiol*; 39(1): i63–i69.

[iii] Mazumder S, et al.,(2010). Effectiveness of zinc supplementation plus oral rehydration salts for diarrhea in infants aged less than 6 months in Haryana State, India. *Bull World Health Organ*; 2010, 88:754–760.

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[vi] Simpson E, Swisler G, Moodley M (2013). Survey of caregivers in Kenya to assess perceptions of zinc treatment for diarrhea in young children and adherence to recommended treatment behaviors. *J of Global Health*; June 2013, 3(1).

[vii] Stene A, MacDonald V, Mitchell S, Bishop A. (Nov. 2010). *Social Marketing Plus for Diarrheal Disease Control: Point-of-Use Water Disinfection and Zinc Treatment (POUZN) Project 2005–2010*. Bethesda, MD: Point-of-Use Water Disinfection and Zinc Treatment (POUZN) Project, Abt Associates Inc.

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3. PNEUMONIA

Accelerator Behavior: Caregivers seek prompt and appropriate care for signs and symptoms of acute respiratory infection (ARI).

Related Behavior:

- (1) Providers correctly diagnose pneumonia, differentiating severe cases;
- (2) Providers recommend the appropriate treatment (antibiotics, with oxygen therapy where indicated);
- (3) Providers refer severe pneumonia cases to a higher level facility;
- (4) Caregivers fully adhere to treatment and/or referral guidelines, seeking additional care if symptoms worsen or no improvement is noted;
- (5) Increased adoption of preventive behaviors including: immunizations (e.g., measles, pneumococcal conjugate vaccine, haemophilus influenza type b (Hib), pertussis), exclusive breastfeeding for six months, adequate complementary feeding among children 6-23 months, measures taken to reduce household air pollution.

Suggested Intervention:

- (1) Ensure access to affordable, high-quality treatment, including dispersible amoxicillin, in both the public and private sectors.
- (2) Create a conducive and supportive policy and regulatory environment for treatment, including advocating pneumonia treatment by community health workers, as appropriate.
- (3) Support sustained demand for amoxicillin, including teaching caregivers to recognize when and where to seek treatment.
- (4) Improve the knowledge and skills of public and private providers to promote and deliver appropriate treatment and care.

Indicator:

- Percentage of children under age 5 who had symptoms of ARI for whom advice or treatment was sought from a health facility or provider

Supporting evidence:

1. Health facility case management for pneumonia cases led to a 29–45 percent reduction in case fatality.^[i]
2. Hospital-based case management of newborn led to 90% reduction and CCM led to 42–75 percent reduction in pneumonia-related neonatal deaths.^[ii]
3. CCM reduces pneumonia-related mortality by 35%.^[iii]
4. CCM results in 70 percent reduction in pneumonia mortality.^[iv]

[i] Niesson, et al. Comparative impact assessment of child pneumonia interventions. *Bull of World Health Organ*; 2009, 87: 472–280.

[ii] Zaidi AKM et al. Effect of case management on neonatal mortality due to sepsis and pneumonia. *BioMed Central Public Health*; 2011, 11(Supp3)S13.

[iii] Theodoratou E et al. The effect of case management on childhood pneumonia mortality in developing countries. *Intl J of Epid*, 2010; 39(Suppl 1): i75–i87.

[iv] *ibid*.

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4. IMMUNIZATIONS

Accelerator Behavior: Caregivers seek full course of timely vaccinations for infants.

Related Behavior:

- (1) Providers give accurate information to caregivers in every immunization encounter on three essential elements: advise on what is given, alert for possible adverse events and the response needed, arrange for when to return
- (2) Local community leaders and community health workers actively support and participate in awareness/demand creation for full vaccination uptake and conduct social mobilization activities ahead of vaccination sessions

Suggested Intervention:

- (1) Health providers need to be trained and adequately supervised to ensure that they give relevant and comprehensible information in a respectful and culturally sensitive manner.
- (2) Support the planning, implementation and monitoring of innovative outreach strategies and approaches such as the reaching every community approach (REC) particularly targeted to reach children who are excluded or beyond the reach of immunization services.
- (3) Partner with local leaders and community health workers in the provision of vaccination services
- (4) Offer incentives to offset individual costs for complying with immunization schedules.
- (5) Increase and sustain public education and mass media campaigns about immunization schedule and safety

Indicator:

- Percentage of children 12–23 months who received all basic vaccinations (i.e., bacillus Calmette-Guérin, measles, three doses polio, three doses diphtheria, pertussis, tetanus [DPT] or pentavalent DPT-Hib-HepB)
- Percentage of children under one year of age who are vaccinated for third dose of DPT/Penta vaccine (WHO/UNICEF Estimate)

Supporting evidence:

- The quality of the interaction between health workers and caregivers is decisive to ensure completion of the vaccination schedule. High dropout rates and caregivers' negative attitudes about immunization services are often due to poor or inadequate information-sharing by health providers.^{[i], [iii], [iv]}
- A substantial number of children worldwide do not complete immunization schedules because neither immunization services nor conventional communication mechanisms regularly reach their communities as result underserved communities consistently show low immunization coverage.^{[iii],[v]}
- Promoting immunization through community networks is a proven means to build trust and acceptance of vaccines. Caregivers are most likely to trust other community members when they make decisions about the health of their children.^{[i],[vi]}
- Interpersonal communication activities with influential local leaders (religious, medical, and political) can positively affect the community's trust in and willingness to vaccinate their children.^{[i],[vi]}
- A child's immunizations status is strongly associated with their household wealth, mother's education and whether they live in an urban or a rural location.^[v]

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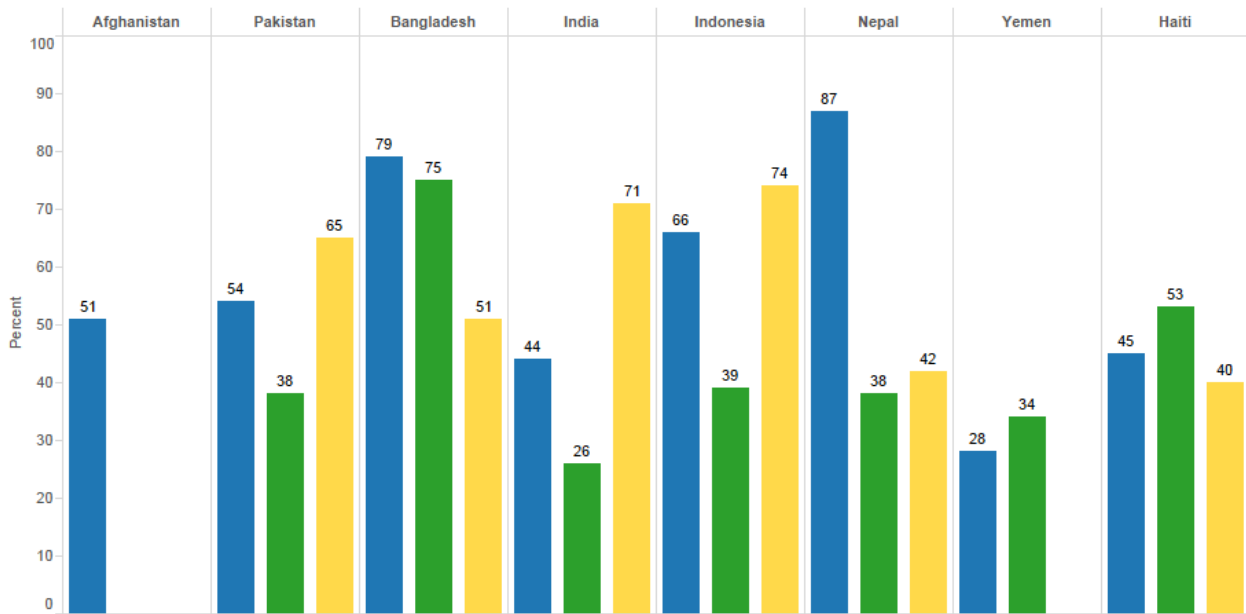
[iv] Is behaviour change communication an effective strategy for increasing immunization coverage? Rajesh Nair¹, Sapna Sachdeva Nair

[v] Finding the final fifth, Inequalities in immunizations

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World Health Organization.(December 2009) Epidemiology of the Unimmunized Child: Findings from the Peer-Reviewed Published Literature, 1999–2009. Prepared by the Centers for Disease Control and Prevention: Global Immunization Division; Atlanta, GA, USA.

Treatment of Child Illness and Vaccination in non-African Priority Countries

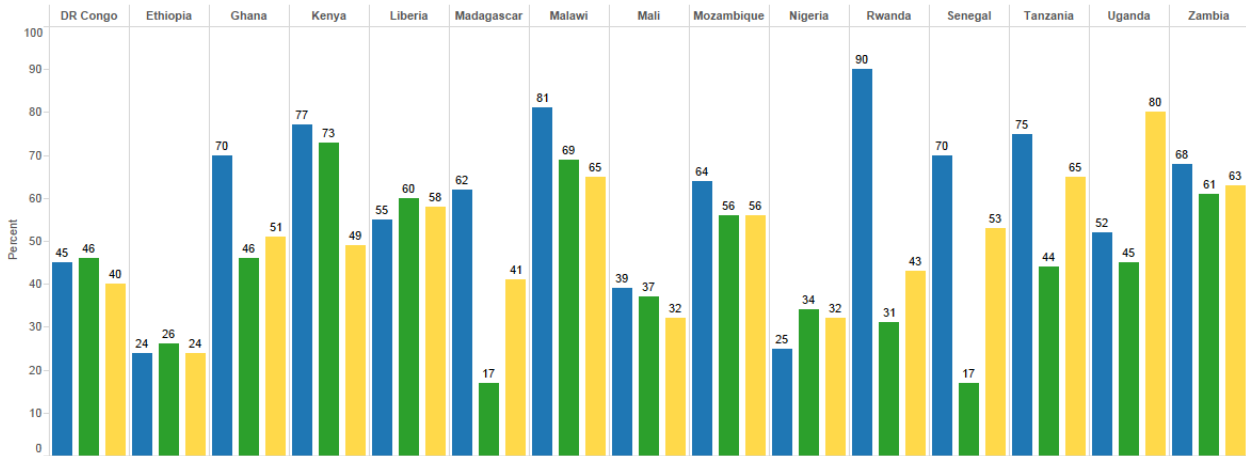


Basic Immunizations=% of children aged 12-23 months with all basic vaccinations
 ORS Treatment for Diarrhea=% of children with diarrhea treated with ORS
 Treatment for Pneumonia=% of children with suspected pneumonia taken to an appropriate provider

CH/I Indicators

- Basic Immunizations
- ORS Treatment for Diarrhea
- Treatment for Pneumonia

Treatment of Child Illness and Vaccination in African Priority Countries

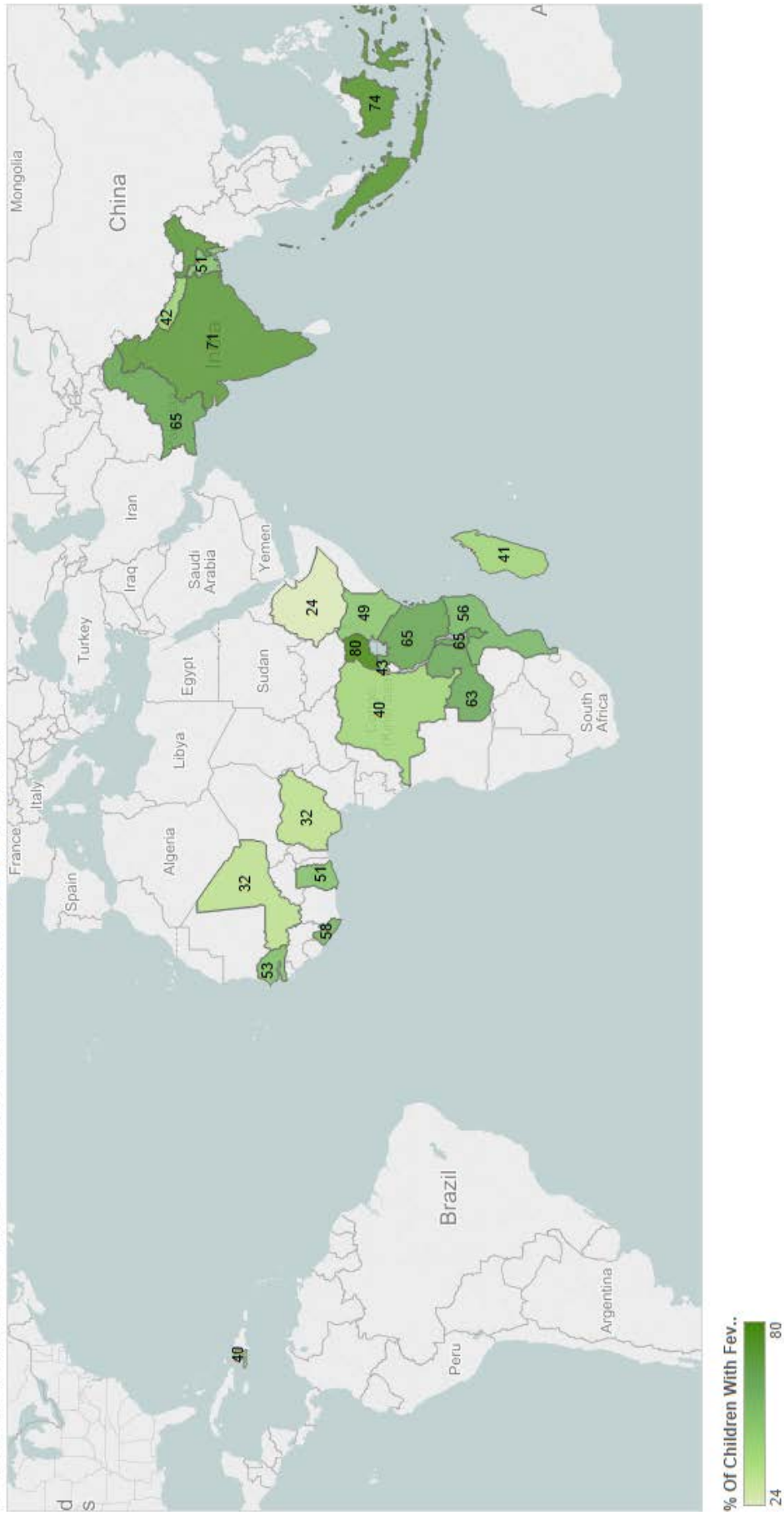


Basic Immunizations=% of children aged 12-23 months with all basic vaccinations
 ORS Treatment for Diarrhea=% of children with diarrhea treated with ORS
 Treatment for Pneumonia=% of children with suspected pneumonia taken to an appropriate provider

CH/I Indicators

- Basic Immunizations
- ORS Treatment for Diarrhea
- Treatment for Pneumonia

% of children with fever who sought treatment from an appropriate provider



5. Water, Sanitation and Hygiene (WASH)

Accelerator Behavior: Handwashing with soap at critical times (i.e., after defecation, after changing diapers and before food preparation and eating).

Related Behavior: Setting up or purchasing a handwashing station (e.g., tippy tap) with soap and water in a fixed place.

Suggested Intervention: Design and implement a behavior change strategy to create demand for handwashing in conjunction with marketing of do-it-yourself or commercial handwashing stations. Ideally, the handwashing station should be ten steps from the place for defecation, and/or the place for cooking, preparing food, eating, and feeding child/baby as well as at schools and health facilities.

Indicator:

- Percentage of households with soap and water at a handwashing facility commonly used by family members

Supporting evidence:

The Evidence Base

- Handwashing with soap and water is the most cost effective health intervention to reduce the incidence of both diarrhea and pneumonia in children under 5.^[i]
- Handwashing with soap by caretakers reduces the risk of diarrhea among under-5s by up to 44 percent.^[ii]
- Handwashing with soap by caretakers reduces the risk of acute respiratory infections among children under 5 by 23 percent.^[iii]

Importance of the Accelerator Behavior

The knowledge-behavior gap

Knowledge is necessary but insufficient to influence consistent and correct handwashing. Even as knowledge rises to an almost universal level, practice rarely follows if other factors are not addressed in interventions. Traditionally, interventions rely heavily on providing information on the disease prevention benefits of handwashing. However, such knowledge has not been shown to be a relevant motivator of HW behavior.^[iv] Moreover, numerous studies have documented the disconnect between knowledge and HW practice, as indicated by high levels of knowledge or self-reported behavior but low levels of observed handwashing.^{[v] [vi] [vii] [viii] [ix]} Skills, in this case “how to wash correctly,” are often confounded with knowledge, although some argue there is a difference between information and skill. In any case, skills are also necessary, but not sufficient to drive consistent and correct HW behavior.

Critical times

There are many critical junctures for handwashing, and deciding which to focus on will greatly impact the design of a program. Emerging evidence suggests that HWS after defecation and before preparing food may have a greater impact on childhood diarrhea than other HW junctures.^[x] Furthermore, understanding determinants of HWS that are specific to critical times of interest (such as what drives handwashing before feeding and food preparation or during labor and delivery) is essential for guiding an effective and locally relevant behavior change approach.^[xi] Practitioners should be aware that the motivators that drive improved handwashing after defecation (e.g., disgust) may not be relevant to improving it at other critical times. More positively oriented drivers such as nurture may be relevant to improving handwashing before food preparation or child feeding.

Enabling environment in the household

Handwashing stations can: (1) facilitate correct handwashing by allowing for flowing water in the absence of a spigot; (2) address the barrier of water availability by allowing HWS with about one-quarter to one half of the water used under other conditions; and importantly, (3) serve as a reminder or “cue to action” when householders leave the latrine or start to cook or feed and see the handwashing station.^{[xii][xiii]}

Studies have found that: (1) observing water at the HW place and soap at the HW place are each associated with observed cleanliness of hands, a proxy of HW behavior; and (2) water observed at the HW place through structured observation is associated with HWS, a direct measure of hand washing.^{[xiv][xv][xvi]} In Bangladesh, observing water at a HW place was associated with a decrease in respiratory illness episodes.^{[xvii][xviii]} Few households surveyed in 20 multiple indicator cluster surveys and DHS conducted in sub-Saharan countries had locations designated for handwashing with soap and water together; the households that did not have such fully stocked HW locations were more likely to be poor with less educated heads of household and to be located in rural areas.^[xix]

Evidence suggests that the following factors influence the appeal, acceptability, selection and use of HW stations: cost, capacity, durability and location(s) within the household (as more than one HW station per household may be required to meet needs).^{[xx][xxi][xxii]}

A core physical requirement for HWS is the presence of soap in the home for this purpose. Such access is not yet universal, and is a source of inequity in several sub-Saharan African countries in particular.^[xxiii] Presence of soap in the home has been shown to be protective against watery diarrhea,^[xxiv] and specifically epidemic cholera.^[xxv] The cost of soap represents an important potential barrier to maintaining soap in the home, particularly at HW stations that are located in common areas. Soapy water represents a potential low-cost alternative to bar soap.^[xxvi]

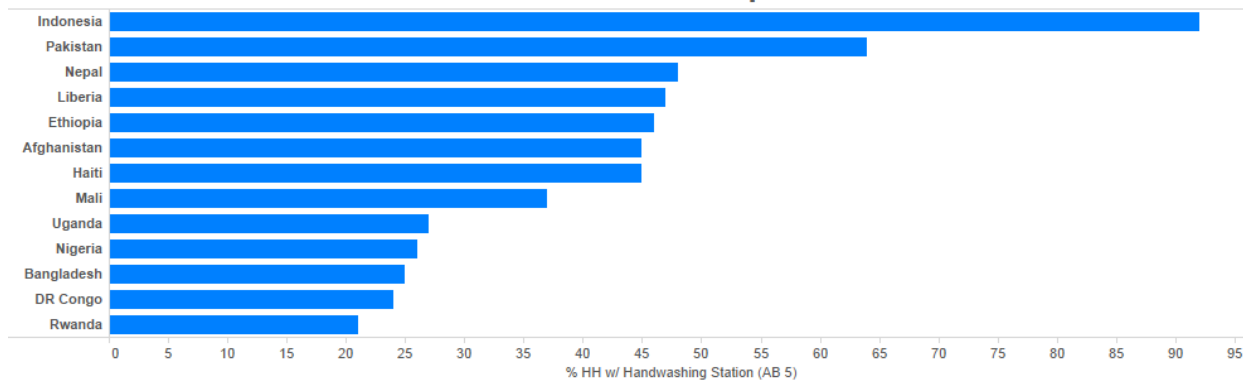
The enabling environment reflects not only the physical but also the social context of the household and community. In qualitative research focusing on handwashing in the perinatal and early infancy periods in Bangladesh, mothers indicated that HW was generally not a habit of individuals in their community, and that the lack of the social norm was commonly cited as a barrier to mothers' handwashing.^[xxvii] Moreover, mothers reported that their in-laws might ridicule them for even attempting to improve their own HW behavior in the perinatal period.

Habit formation

Key research has specifically focused on the science of habit formation as critical to increasing and sustaining HW behaviors. Studies revealed that as much as 45 percent of what we do every day is habitual: performed automatically in the same location or at the same time each day, usually because of subtle cues.^[xxviii] Successful habit change interventions involve disrupting the environmental factors that automatically cue habit performance.^{[xxix][xxx]}

Making handwashing a habit often increases the likelihood that it will be practiced. A habit scale was developed using data collected as part the household survey in Peru and Senegal under the Global Handwashing Scaling Up Project funded by the Bill and Melinda Gates Foundation and implemented by the Water and Sanitation Program. Habit scores were predictors of HW before food handling but not after defecation in the case of Senegal. A 1-point increase in the habit scale increased the likelihood of washing hands prior to food handling by 2.5 times.^[xxxi]

Accelerator Behavior #5: % of HH with Observed Handwashing Station for which Station Included Soap and Water



[i] UNICEF. (2012). Pneumonia and diarrhoea: Tackling the deadliest diseases for the world's poorest children. http://www.unicef.org/media/files/UNICEF_P_D_complete_0604.pdf.

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6. HEALTHY TIMING AND SPACING OF PREGNANCY (HTSP)

Accelerator Behavior: After a live birth, women use a modern contraceptive method to avoid pregnancy for at least 24 months¹ (resulting in approximately three years between births)

Related Behavior:

- (1) With simple, targeted messages, providers educate women and their partners on the health and quality of life benefits of pregnancy spacing and the mortality and malnutrition risks of rapid, repeat pregnancies and early/late age pregnancies.²
- (2) Women delay first birth until age 18, through delay of sexual debut or continuous use of modern contraceptive methods.
- (3) After a miscarriage or induced abortion, women or their partners use a modern contraceptive method to avoid pregnancy for at least six months.³
- (4) Women or their partners use a modern contraceptive method to avoid childbearing at advanced maternal age (>34).⁴

Suggested Intervention:

- (1) Use targeted, multi-channel social and behavior change communication (SBCC) to advance understanding of family planning as a lifesaving intervention for women and children and create demand for modern contraceptive methods.⁵
- (2) Use targeted, multi-channel SBCC to promote equitable gender norms and shared reproductive decision-making between women and their partners.
- (3) Ensure access to a range of modern contraceptive methods, including fertility awareness methods, short-acting methods, long-acting reversible contraceptive methods (LARCs), and permanent methods (PMs) for women and men.
- (4) Train providers to counsel women and their partners on their family planning options during critical moments such as the antenatal and post-partum periods and post-abortion care.
- (5) Implement provider behavior change interventions that address not only knowledge and skills, but key motivational factors, including provider attitudes towards specific populations and methods.
- (6) Implement adolescent reproductive health interventions, including both comprehensive sexuality education and provision of youth-friendly reproductive health services, targeting married and unmarried youth of both sexes.

¹ Report of a WHO Technical Consultation on Birth Spacing, World Health Organization, Geneva, Switzerland, 13-15 June, 2005.

² Sebastian, Mary, M.E. Khan, Sohini Roychowdhury, 2010. *Promoting healthy spacing between pregnancies in India: need for differential education campaigns*, Patient Education and Counseling, Vol. 81 (3) 395-401;

³ Report of a WHO Technical Consultation on Birth Spacing, World Health Organization, Geneva, Switzerland, 13-15 June, 2005. The technical experts at this meeting made this recommendation based on the following study of over 258,000 women: Agustin Conde-Agudelo, Jose Belizan, R Breman, S.C. Brockman, Anyeli Rosas-Bermudez, 2005. *Effect of the interpregnancy interval after an abortion on maternal and perinatal health in Latin America*, International Journal of Gynecology and Obstetrics, Vol. 89: S34-S40. A 2012 study of over 9000 women in Bangladesh found that interpregnancy intervals of less than three months after a miscarriage, compared with 6-12 months, were associated with a significant risk of late neonatal mortality in the next pregnancy. Julie DaVanzo, Lauren Hale, Mizanur Rahman 2012. *How long after a miscarriage should women wait before becoming pregnant again? Multivariate analysis of cohort data from Matlab, Bangladesh*, BMJ Open, 2.

⁴ The publication *Facts for Family Planning* contains evidence-based, behavior change communication messages to encourage healthy timing and spacing of pregnancy. USAID/FHI360.2013. *Facts for Family Planning*. Durham, North Carolina: FHI360/Communication for Change Project.

⁵ Shruti Goel, Isha Bhatnagar, M.E. Khan, Avishek Hazra, 2010. *Increasing postpartum contraception in rural Uttar Pradesh*, Journal of Family Welfare, Vol. 56, Special Issue. This study found that, among women who had heard a birthspacing message, 50 percent were using a contraceptive method, while among those who had no exposure, contraceptive use was 37 percent ($p < 0.001$) See also: Chelsea M. Cooper, Salahuddin Ahmed, Peter Winch, Anne Pfitzer, Catharine McKaig, Abdullah Baqui, 2014. *Findings from the use of a narrative story and leaflet to influence shifts along the behavior change continuum toward postpartum contraceptive uptake in Sylhet, District, Bangladesh*, Patient Education and Counseling, December, Vol. 97 (3): 376-382.

Indicators:

- Modern contraceptive prevalence rate.
- Percentage of births spaced less than 36 months apart, including adolescent births.
- Percentage of women <18 who are pregnant or have given birth.
- Percentage of women > 34 who are pregnant.

Evidence on birth spacing and health outcomes

- A 2014 study found that spacing pregnancies (not births) three years apart is the fertility behavior associated with the greatest reduction of under-five mortality. An analysis of 45 Demographic and Health Surveys, and over 1.1 million births, concluded that “if all women would wait at least 36 months to conceive again, under-five deaths would fall by 26 percent.” This would mean that deaths to under-five aged children in USAID’s 24 priority countries would fall by 1,342,000 annually.⁶ It is important to note that this 2014 study supports a longer birth-pregnancy interval (36 months from pregnancy-pregnancy) than the 2005 WHO recommendation reflected in the HTSP accelerator behavior above (24 months from birth-pregnancy).
- This study also concluded that “under-five mortality could be reduced by one-third if women would wait 36 months to conceive again, have their children between ages 18-39 years, and not have more than three children.” In this case, with the avoidance of additional high-risk fertility behaviors, deaths to under-five children would fall by 1,904,000 annually.⁷
- In developing countries, approximately 57 percent of births are spaced less than three years apart. For many countries, this statistic has not measurably changed in many years. For adolescents, these percentages rise to 95-97 percent.

Evidence Summit conclusions on interventions to prevent rapid, repeat pregnancy

- Twelve randomized controlled trials and ten studies using a quasi-experimental design conducted on vulnerable populations in the US found that selected interventions achieved a statistically significant reduction in the repeat pregnancy rate at 12,18, or 24 months postpartum.⁸ These studies found that programs that help empower women, focus on skills-building, and include access to contraception are more likely to achieve positive reproductive health behavior change, compared to programs that do not include motivational components. Common components of these programs include multiple provider contacts during the antenatal and postpartum periods, motivational provider behavior (some studies mentioned “mentoring”), and goal – setting – for example educational, employment, or parenting goals.
- Three studies using quasi-experimental designs conducted in developing countries (Egypt, India, and Bangladesh) found that selected interventions achieved a statistically significant increase in postpartum contraceptive use through at least 9 months postpartum. These studies found that when providers clearly specify healthy pregnancy spacing behaviors and convey information about risks and benefits of the behaviors, women are more likely to use postpartum family planning services. Many women and men are unaware of the risks of rapid, repeat pregnancies. This research shows that when they learn of the risks, they become highly motivated to use family planning to prevent adverse health outcomes for mother and baby.

Evidence on pregnancies occurring before age 18 and health outcomes

- A 2014 study, the largest multi-country study ever undertaken to assess pregnancy outcomes among adolescent mothers, found higher risks of eclampsia, puerperal endometritis, and systemic infections among adolescent mothers, including mothers ages 18 and 19, compared with mothers ages 20-24 years.⁹
- With respect to perinatal outcomes, the same study found higher risks of low birth weight, preterm delivery, and severe neonatal conditions among adolescent mothers, compared to mothers ages 20-24 years old.
- A 2005 study of more than 850,000 Latin American women younger than 25 years found that, after

⁶ Rutstein, Shea and Rebecca Winter. 2014. *The Effects of Fertility Behavior on Child Survival and Child Nutritional Status: Evidence from the Demographic and Health Surveys, 2006 to 2012*. DHS Analytical Studies No. 37, Rockville, Maryland, USA: ICF International.

⁷ Rutstein’s analyses of the numbers of under-five deaths averted annually were presented to USAID in March, 2014.

⁸ Norton M, Chandra-Mouli V, Suggs C, and Murray V, 2014. *Healthy timing and spacing of pregnancy, in Caregiver behavior change for child survival and development in low and middle-income countries: an examination of the evidence in Population-Level Behavior Change to Enhance Child Survival and Development in Low- and Middle Income Countries: A Review of the Evidence*, Journal of Health Communication, International Perspectives, Vol. 19, Supplement 1. ..

⁹ Ganchimeg T, et.al, on behalf of the WHO Multicountry Survey on Maternal Newborn Health Research Network. *Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study*. BJOG 2014; 121 (Suppl. 1): 40-48.

adjustment for sixteen confounding factors, adolescents aged 15 years or younger had higher risks for maternal death, early neonatal death, and anemia, compared to women aged 20 to 24. Moreover, all age groups of adolescents had higher risks for postpartum hemorrhage, puerperal endometritis, low birth weight, preterm delivery and small-for-gestational age infants.¹⁰

Evidence Summit conclusions on interventions to prevent pregnancy before age 18

- Evidence from randomized controlled trials and systematic reviews of randomized controlled trials indicates that programs that combine sexuality education with contraceptive education and provision, and include components for positive youth development, reduced unintended adolescent pregnancy. One review commented that interventions to reduce adolescent pregnancy appear to be most effective “when a multi-faceted approach is used, as the problem is ...multidimensional. The interventions should not only focus on sexual factors ..., they should include skills training and personal development as well.”¹¹
- A 2012 review of 34 evaluations, only four of which were categorized as rigorous, concluded that programs aimed at empowering adolescent girls and providing them with incentives to join school and stay in school have been most effective in preventing early marriage in low income countries.¹² Other studies have emphasized the importance of community-level activities to address social norms in support of ending child marriage and early pregnancy.¹³

Evidence on High Parity and Advanced Maternal Age Pregnancies

Despite numerous studies on advanced maternal age and high parity pregnancies and adverse maternal and child outcomes,¹⁴ the Evidence Summit Review did not find a single intervention study on these topics.

Across all family planning and birth spacing-related behaviors, numerous studies have demonstrated the importance of targeted, multi-channel communication that employs behavioral theory, follows a proven process for design and implementation, and emphasizes engagement of the target audience(s).¹⁵ In addition to helping people understand benefits and side effects of FP and addressing norms and attitudes around timing and spacing of pregnancies, SBCC interventions may benefit from engaging men as well as women. Studies have shown that engaging men in FP and counseling (e.g., community health workers provide education, counseling and methods to both wife and husband) or more intensive SBCC programs (e.g., male motivators engage young husbands in discussions about FP, gender norms and the importance of communication and joint decision making) have led to increased uptake of FP.

Kraft JM, Wilkins KG, Morales GJ, Widyono M and Middlestadt SE (2014) An evidence review of gender-integrated interventions in reproductive and maternal-child health. *Journal of Health Communication*, pending publication

¹⁰ Agustin Conde-Agudelo, Jose M. Belizan, Cristina Lammers, 2005. Maternal –perinatal morbidity and mortality associated with adolescent pregnancy in Latin America: cross sectional study, *American Journal of Obstetrics and Gynecology*, February, Vol. 192(2): 342-349.

¹¹ C Oringanje et. al., Interventions for preventing unintended pregnancies among adolescents – review. *Cochrane Database of Systematic Reviews*. 2009. 4, No CD005215.

¹² S Lee-Rife et. al., What works to prevent child marriage: A review of the evidence. *Studies in Family Planning*. 2012. 43, 4, 287-303.

¹³ Kraft J.M., Wilkins K.G., Morales G.J., Widyono M. and, & Middlestadt S.E (2014) *An evidence review of gender-integrated interventions in reproductive and maternal-child health*. *Journal of Health Communication*, pending publication.

¹⁴ J Stover, J Ross, *How increased contraceptive use has reduced maternal mortality*, *Maternal and Child Health Journal*, September 2010, Vol 14, Issue 5, 687-695. The study found, “By reducing demographical high-risk births in particular, especially high parity births, family planning reduced the MMR and thus averted additional maternal deaths.” Other studies have found that advanced maternal age pregnancies are associated with increased risk of maternal mortality, miscarriage, chromosomal abnormalities, congenital abnormalities, gestational diabetes, placenta previa, macrosomia, and abruption. See, for example, J Cleary-Goldman et al, Impact of maternal age on obstetric outcomes, *Obstetrics and Gynecology*, May 2005, 105: 983-990 ; D Goffman et al, Predictors of maternal mortality and near miss maternal morbidity, *Journal of Perinatology*, 2007, 27, 597-601. The analysis identified ages 35-39, > than age 39, and gravidity as significant risk factors.

¹⁵ [HIP Brief] Health communication: *Enabling voluntary and informed decision-making*. Available at http://www.fphighimpactpractices.org/sites/fphips/files/hip_healthcomm_brief.pdf.

% of births spaced > 24 months



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7. NUTRITION

Accelerator Behavior: Early initiation (within one hour) after delivery and exclusive breastfeeding for six months after birth

Related Behavior:

- (1) Mother's competence on continued breastfeeding and complementary foods (i.e., children age 6–23 months are fed adequate dietary diversity and meal frequency).
- (2) Educated households and community members, supportive of breastfeeding, knowledgeable about opportunity costs and control of diseases.

Intervention:

- (1) Train community members to form support groups for mothers and other family members.
- (2) Assist community health workers/providers to facilitate an enabling environment where opportunities are maximized (e.g., wash, nutrition, mother's health, PMTCT).
- (3) Align policy makers and donors in supporting "optimal practices" and friendliness of early breastfeeding, especially at facilities.
- (4) Include men and other influencers (e.g. mothers-in-law) in behavior change activities.

Indicators:

- The percentage of mothers parenting last born children born in the past two years who started breastfeeding within one hour of birth
- Proportion of infants 0–5 months of age who are fed exclusively with breast milk
- Minimum dietary diversity (children 6–23 months)
- Minimum meal frequency (breastfed children 6–23 months)¹⁶

Supporting evidence:

According to a recent Lancet series on Maternal and Child Nutrition <http://www.thelancet.com/series/maternal-and-child-nutrition>, the promotion of infant and young child feeding (IYCF), including breastfeeding and appropriate complementary foods, are among the interventions with the largest predicted effects on child mortality. According the series articles, "undernutrition is responsible for 45% of deaths of children younger than 5 years, amounting to more than 3 million deaths each year." Therefore, investing in nutrition interventions such as IYCF will have the greatest impact in ending preventable child and maternal deaths. Suboptimal breastfeeding alone accounts for over 800,000 annual deaths globally, accounting for nearly 12% of deaths in children younger than 5 years attributed to nutritional disorders. There is strong evidence that the promotion of appropriate complementary feeding practices (defined as the timely introduction of safe and nutritionally rich foods in addition to breast-feeding from 6 to 23 months of age) reduces the incidence of stunting.

Excerpt below from "Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?" The Lancet, **Volume 382, Issue 9890**, Pages 452 - 477, 3 August 2013

Promotion of breastfeeding and supportive strategies

We updated the previous review by Imdad and colleagues,⁵² which assessed the effect of promotion interventions on occurrence of breastfeeding, and concluded that counselling or educational interventions increased exclusive breastfeeding by 43% at day 1, by 30% till 1 month, and by 90% from 1–5 months. Significant reductions in occurrence of mothers not breastfeeding were also noted; 32% reduction at day 1, 30% till 1 month, and 18% for 1–5 months (**table 353–62**). Combined individual and group counselling seemed to be better than individual or group counselling alone. Although these results show the potential for scaling up, none of these trials address the issues of barriers around work environments and supportive strategies such as maternity leave provision. A Cochrane review ⁶³ of interventions in the workplace to support breastfeeding for women found no trials. Although some trials are underway, much more needs to be done to assess innovations and strategies to promote breastfeeding in working women, especially in underprivileged communities.

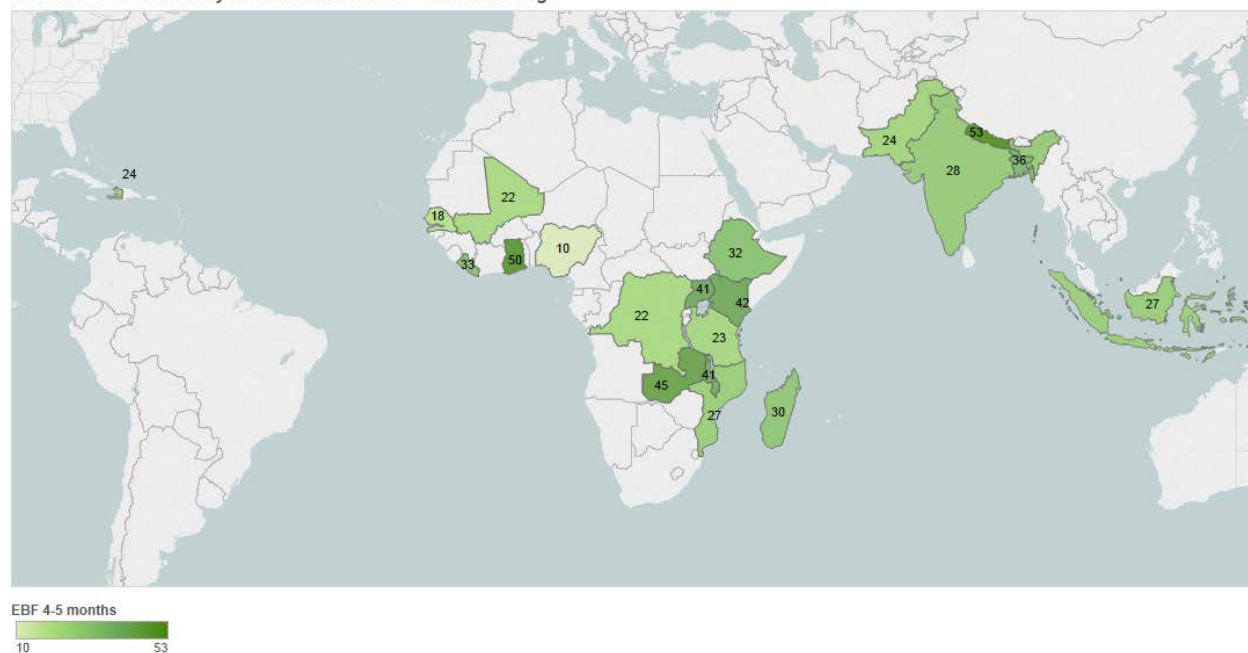
Community-based platforms for nutrition education and promotion

¹⁶ A composite indicator called Minimum Acceptable Diet is also commonly used for both Minimum Dietary Diversity and Minimum Meal Frequency; For more information on indicators related to Infant and Young Child Feeding practices, go to: <http://www.who.int/nutrition/publications/infantfeeding/9789241599290/en/>

Community-based interventions to improve maternal, newborn, and child health are now widely recognised as important strategies to deliver key maternal and child survival interventions and have been shown to reduce inequities in childhood pneumonia and diarrhoea deaths. These interventions are delivered by health-care personnel or lay individuals, and implemented locally in homes, villages, or any defined community group. A full spectrum of promotive, preventive, and curative interventions can be delivered via community platforms, including provision of basic antenatal, natal, and postnatal care; preventive essential newborn care; breastfeeding counselling; management and referral of sick neonates; development of skills in behaviour change communication; and community mobilisation strategies to promote birth and newborn care preparedness. For example, a review of community-based packages of care suggested that these interventions can improve rates of facility births by 28% (RR 1.28, 95% CI 1.04–1.59) and result in a doubling of the rate of initiation of breastfeeding within 1 h (RR 2.25, 95% CI 1.70–2.97). Lewin and colleagues reviewed 82 studies with lay health workers and showed moderate quality evidence of effect on initiation of breastfeeding (RR 1.36, 95% CI 1.14–1.61), any breastfeeding (1.24, 1.10–1.39), and exclusive breastfeeding (2.78, 1.74–4.44) when compared with usual care. Although much of the evidence from large-scale programmes using community health workers is of poor quality, process indicators and assessments do suggest that community health workers are able to implement many of these projects at scale, and have substantial potential to improve the uptake of child health and nutrition outcomes among difficult to reach populations. It is important to underscore the crucial importance of community engagement and buy-in to ensure effective community outreach programs, behavior change, and access.

Other recent reviews have found there is extensive evidence for positive impact of social and behavior change communication, on improving infant feeding practices and nutritional status. One-on-one or small group communication is the approach most consistently and effectively used, with the most published evidence supporting it. Mutually reinforcing interventions through multiple channels (including mass media approaches) and points of contact improve effectiveness of social and behavior change interventions. It has also been identified that projects using social and behavior change theoretical approaches have a greater impact on outcomes than those that do not. Finally, the [USAID 2014-2025 Multi Sectoral Nutrition Strategy](#), outlines the importance of SBCC for nutrition interventions, specifically the need to develop long term strategies to promote lasting change.

% of children exclusively breastfed between 4-5 months of age



Works cited:

Lutter C et al. Undernutrition, Poor Feeding Practices, and Low Coverage of Key Nutrition Interventions. Aug. 31, 2011. *Pediatrics*. 128 (6): e1418-e1427. Published Online: <http://pediatrics.aappublications.org/content/128/6/e1418.full>

Green CP. Improving Breastfeeding Behaviors: Evidence from Two Decades of Intervention Research. Nov. 1, 2009. LINKAGES Project.

Lutter CK et al. (2013). Key principles to improve programmes and interventions in complementary feeding. *Maternal and Child Nutrition*. (2013), 9(Suppl. 2): 101–115.

Lancet Series on Nutrition Papers:

Black R.E., Victora C.G., Walker S.P., Bhutta Z.A., Christian P., de Onis M. et al. (2013) Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet* 382 (9890), 427–451. Published Online: <http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2813%2960937-X/abstract>

Bhutta Z., Das J. & Rizvi A. (2013) The Lancet Nutrition Interventions Review Group, and the Maternal and Child Nutrition Study Group. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost. *The Lancet* 382 (9890), 452–477. Published Online: <http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2813%2960996-4/abstract>

Evidence Reviews:

SPRING Project: Evidence of Effective SBCC Approaches to Improve Women's Dietary Practices during Pregnancy and Lactation <https://www.spring-nutrition.org/publications/series/evidence-effective-approaches-social-and-behavior-change-communication>

GAIN: Identifying determinants of effective complementary feeding behaviour change interventions in developing countries <http://www.gainhealth.org/wp-content/uploads/2014/11/Complementary-feeding-behaviour-change-interventions.pdf>

Global Nutrition Report:

International Food Policy Research Institute. 2014. Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition. Washington, DC. Available online: <http://globalnutritionreport.org/2014/11/13/global-nutrition-report-2014/>

Infant and Young Child Feeding Indicators:

WHO (2010). Indicators for assessing infant and young child feeding practices Infant and Young Child Feeding; Available Online at: <http://www.who.int/nutrition/publications/infantfeeding/9789241599290/en/>

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8. MATERNAL

Accelerator Behavior #8a: Pregnant women attend antenatal care to reduce preventable maternal deaths

Related Behaviors:

- (1) Pregnant women and families recognize the importance of timely antenatal care (ANC);
- (2) Health providers offer quality antenatal care;
- (3) Providers appropriate screen, test, and treat for complications;
- (4) Pregnant women adhere to screening, testing, and treatment of complications

Suggested Interventions:

- (1) Promote health education/community mobilization to improve knowledge of importance of timely ANC;
- (2) Train healthcare providers (and community health workers) on interpersonal communication and community mobilization skills for preventive actions and treatment.
- (3) Engage with private sector and professional associations to improve interpersonal communication between private providers and the patients who seek care in the private or informal sector.
- (4) Educate patients and care providers about measures that reduce social costs of seeking ANC (“e.g.,” waiting hours, operating hours, transportation issues).
- (5) Mobilize communities – community leaders, husbands, families, and youth (including women’s groups) – to increase awareness of and demand for quality antenatal care.

Indicator:

- Among women with a live birth in the last 3 years, the proportion of women who received at least 4 ANC visits during most recent pregnancy

Accelerator Behavior: #8b: Pregnant women attend facilities for delivery to reduce preventable maternal deaths

Related Behaviors:

- (1) Pregnant women and families recognize the importance of timely delivery care in a facility;
- (2) Health providers offer quality delivery care;
- (3) Providers appropriate identify, manage, treat, and refer complications;
- (4) Pregnant women adhere to referral and treatment

Suggested Interventions:

- (1) Promote health education/community mobilization to improve knowledge of importance of facility-based delivery (such as birth preparedness plans);
- (2) Train healthcare providers (and community health workers) on interpersonal communication and community mobilization skills for preventive actions and treatment.
- (3) Engage with private sector and professional associations to improve interpersonal communication between private providers and the patients who seek care in the private or informal sector.
- (4) Educate patients and care providers about measures that reduce social costs of seeking facility-based delivery care (“e.g.,” waiting hours, operating hours, transportation issues).
- (5) Mobilize communities – community leaders, husbands, families, and youth (including women’s groups) – to increase awareness of and demand for quality facility-based delivery care.

Indicator:

- Among women with a live birth in the last 3 years, the proportion of women who gave birth in a facility for most recent birth

Supporting evidence:

An estimated 289,000 women worldwide die each year as a result of pregnancy and childbirth. Ninety-nine percent of preventable maternal deaths occur in low- and middle-income countries. The lifetime risk of maternal mortality in women living in sub-Saharan Africa is more than 47 times greater than for those in the United States. Within countries, risk of death is disproportionately high among the most vulnerable segments of the society, yet most maternal deaths suffered each year are preventable (WHO, 2014). The main causes of death include hemorrhage (27%), hypertensive diseases (14%), sepsis (11%), abortion complications (8%), and indirect non-obstetric causes (27%) (Say et al, 2014).

In USAID's Maternal Health: Vision for Action, USAID broadens the focus of maternal health programs to work beyond the intrapartum and immediate postpartum period to ensure antenatal and extended postpartum care to diagnose, treat or prevent life-threatening complications and connect women with appropriate services beyond the postpartum period. In addition, USAID is strengthening the focus on addressing the indirect causes of maternal death, including HIV and AIDS, malaria, tuberculosis, other sexually transmitted infections, malnutrition (both under-nutrition and obesity), and chronic diseases (e.g., high blood pressure, diabetes, cardiac disease), which are contributing a larger proportion of the deaths (USAID Maternal Health Vision for Action, Evidence for Strategic Approaches, 2015).

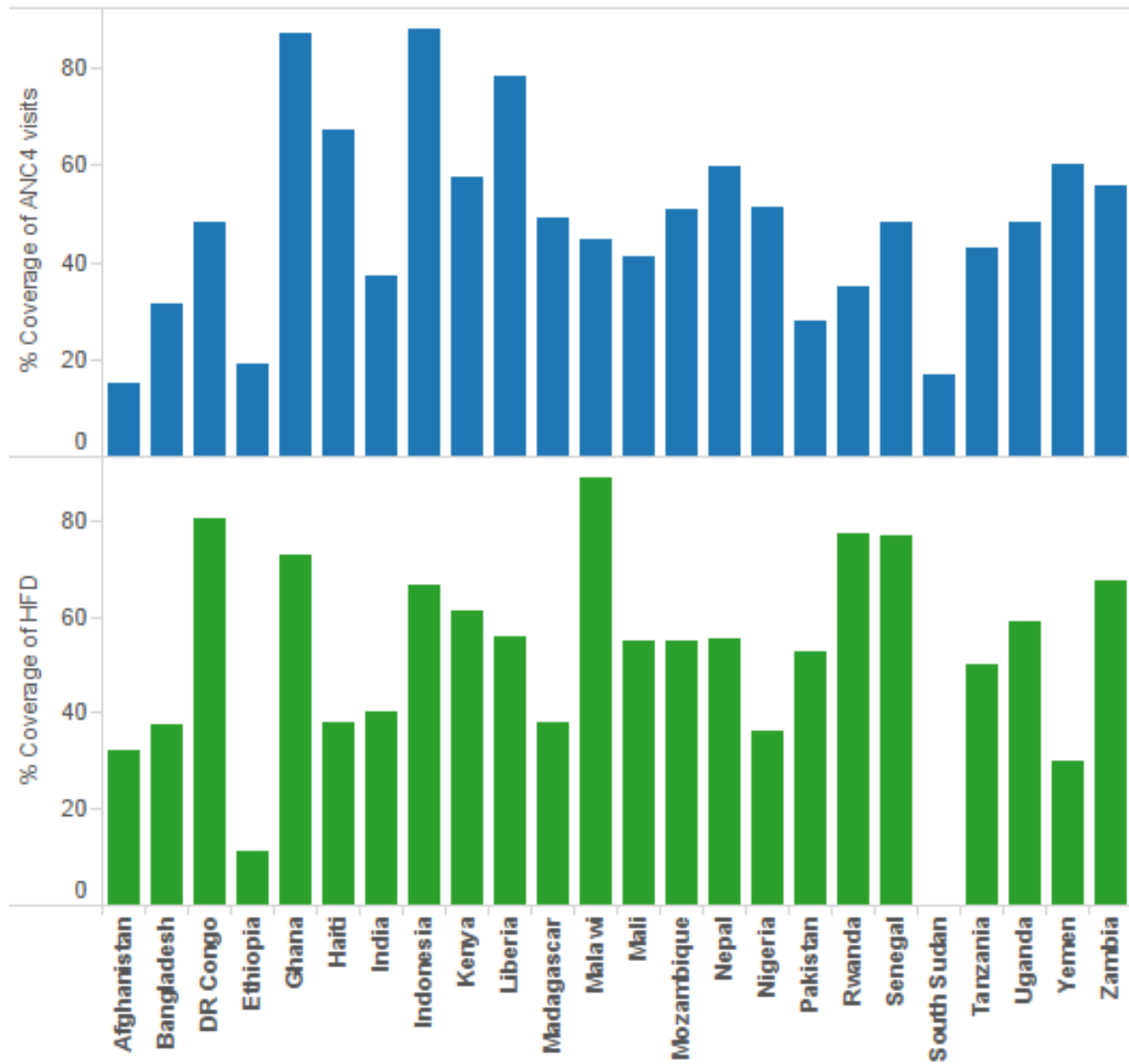
The Partnership for Maternal, Newborn, and Child Health (PMNCH) has developed 56 essential interventions to reduce mortality. Interventions for maternal health include a variety of interventions provided during antenatal care and during delivery. In antenatal care, several interventions are crucial for identifying and treating complications that could affect the woman and her baby. These tests include: testing for sexually transmitted infections including syphilis, testing for HIV, testing for anemia, testing for pre-eclampsia/eclampsia, among others. In addition, several preventive measures are initiated, such as preventive treatment for malaria during pregnancy, iron/folate supplementation, tetanus toxoid immunization, and assessing any other danger signs such as bleeding (PMNCH, 2011). The World Health Organization currently recommends four antenatal care visits during pregnancy – WHO recommends a minimum of four ANC visits, ideally at 16 weeks, 24-28 weeks, 32 weeks and 36 weeks. It is therefore essential that women attend all visits – both those that occur early in the pregnancy and those at the end of the pregnancy. In addition, delivery in a health facility is an essential intervention to decrease preventable maternal death. In a health facility, skilled providers can assess, identify, manage, and treat life-threatening complications with adequate equipment and supplies.

There are many barriers to women seeking timely and complete antenatal care visits and as delivery care in a facility. Women often have limited knowledge of maternal complications and limited decision-making within the household. Often husbands make the decisions around health care, especially when to become pregnant, how often pregnancies should occur, and what type of services can be accessed once pregnant (PMNCH, 2013).

Health communication and other behavior change interventions to improve knowledge of maternal and fetal care are essential to improving household behaviors and care seeking for potentially life-threatening complications. Culturally appropriate information and messages can be shared through a variety of channels such as mass media, interpersonal counseling, and women's groups. Messages should be tailored to the context and target men, boys, and their families, influential leaders, and other decision-makers as well as women and girls. However, health communication that imparts knowledge is more effective if it involves dialogue and problem solving skills (Rosato et al., 2008; Wallerstein, 1992), and is provided through participatory or empowering approaches that support longer-term processes in which communities are actively involved in shaping their health (Rifkin, 1996). Interventions include community-based identification of problems, understanding root causes (such as barriers to use of care), mobilizing necessary resources, demanding rights to health and quality services (Rosato et al., 2008; Costello et al., 2006), and promoting supportive community norms.

Women's groups and community participation, and other such community-based efforts have aimed at improving women's and family's knowledge of danger signs of maternal complications, where to seek care, the importance of facility birth, the risks of female genital mutilation, and the importance of pregnancy and postnatal home visits by community health workers. These efforts have met with success in improving use of facilities for birth, referral for complications, improvement in traditional birth attendant care practices during home births, reduction of maternal morbidities, and reductions in stillbirths and perinatal mortality (Marston et al., 2013; Prost et al., 2013; Lassi et al., 2010; Lassi et al., 2013). In a 2013 meta-analysis, women's groups in three of four South Asian trials demonstrated strong effects on uptake of clean delivery practices and breastfeeding, significant increases in uptake of ANC, and institutional deliveries (Prost et al., 2013).

Coverage of Health Facility Delivery and ≥ 4 Antenatal Care Visits



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9. NEWBORN

Accelerator Behavior: Caregivers seek prompt and appropriate care for signs and symptoms of newborn illness to reduce preventable newborn death.

Related Behaviors:

- (1) Caregivers recognize signs of newborn illness;
- (2) Accelerate demand for services to treat newborn complications;
- (3) Providers correctly diagnose newborn illness, differentiating severe cases;
- (4) Providers recommend the appropriate treatment
- (5) Providers refer severe cases to a higher level facility;
- (6) Caregivers fully adhere to treatment and/or referral guidelines, seeking additional care if symptoms worsen or no improvement is noted;
- (7) Increased adoption of preventive behaviors including: clean and safe delivery; immediate breastfeeding; measures taken to reduce household air pollution.

Suggested Interventions:

- (1) Promote health education to improve knowledge of danger signs for newborn illness among families and community health workers;
- (2) Promote health education on where to obtain appropriate care for signs/symptoms of newborn illness among families and community health workers;
- (3) Train healthcare providers (and community health workers) on interpersonal communication and community mobilization skills for preventive actions and treatment.
- (4) Engage with private sector and professional associations to improve interpersonal communication between private providers and the patients who seek care in the private or informal sector.
- (5) Educate patients and care providers about measures that reduce social costs of seeking care (“e.g.,” waiting hours, operating hours, transportation issues).
- (6) Mobilize communities – community leaders, husbands, families, and youth (including women’s groups) – to increase awareness of and demand for newborn care services.
- (7) Implement and test community insurance schemes and community-based transportation options.

Indicator:

- The percentage of newborns (0–28 days) with signs on illness whose caretaker sought treatment from an appropriate provider in the two weeks preceding the survey

Supporting evidence:

Each year, almost 3 million newborns die within the first month of life, accounting for 44 percent of deaths among children under-5 years of age (1). The leading causes of newborn death are preterm birth complications (35%), intrapartum-related complications or asphyxia (24%), and sepsis (15%). Low birth weight is the most important indirect cause of death; more than 80% of newborn deaths are in small babies (preterm or small for gestational age) in the highest burden countries (2). The majority of countries with high-burden of newborn mortality have experienced recent conflict and/or humanitarian emergencies. Weak health systems, low rates of facility-based delivery, and poor quality of delivery care are also factors in these countries. The majority of deaths occur during labor and delivery and within the first week of life, so quality care around the time of birth and the first week of life are essential to reduce preventable death (3).

In many high burden countries, the majority of births take place at home, where risk of newborn complications is high. Even when women give birth in health facilities, quality of care can be poor, and they are often discharged soon after giving birth. As a result, signs of complications or illness can develop at home which require care seeking and treatment at health facilities.

However, women and families often delay accessing skilled care for a variety of socio-cultural, financial, logistical, and other reasons. In 1994, Thaddeus and Maine developed the Three Delays model which organizes barriers to identification and care seeking for maternal complications, including: 1) delay in deciding to seek care; 2) delay in reaching a facility; and 3) delay in receiving quality care (4). The first delay includes both recognition of complications and decision to seek care. This framework has also been successfully applied to newborn health (5). Improving the availability of care will not effectively reduce neonatal mortality unless families know when, where, and how to seek it (6).

There are many well-known barriers to seeking skilled care, such as financial constraints, distance to facilities, and poor quality of care and provider skills. Psychosocial factors, including cultural beliefs, practices, and customary rules for family decision-making, have also been found to influence identification of and appropriate care seeking for both maternal complications and newborn illness. Among these are:

- Challenges recognizing symptoms that indicate a potentially life-threatening complication, or when the severity of that condition requires skilled care. This includes lack of understanding about when normal maternal symptoms progress to life

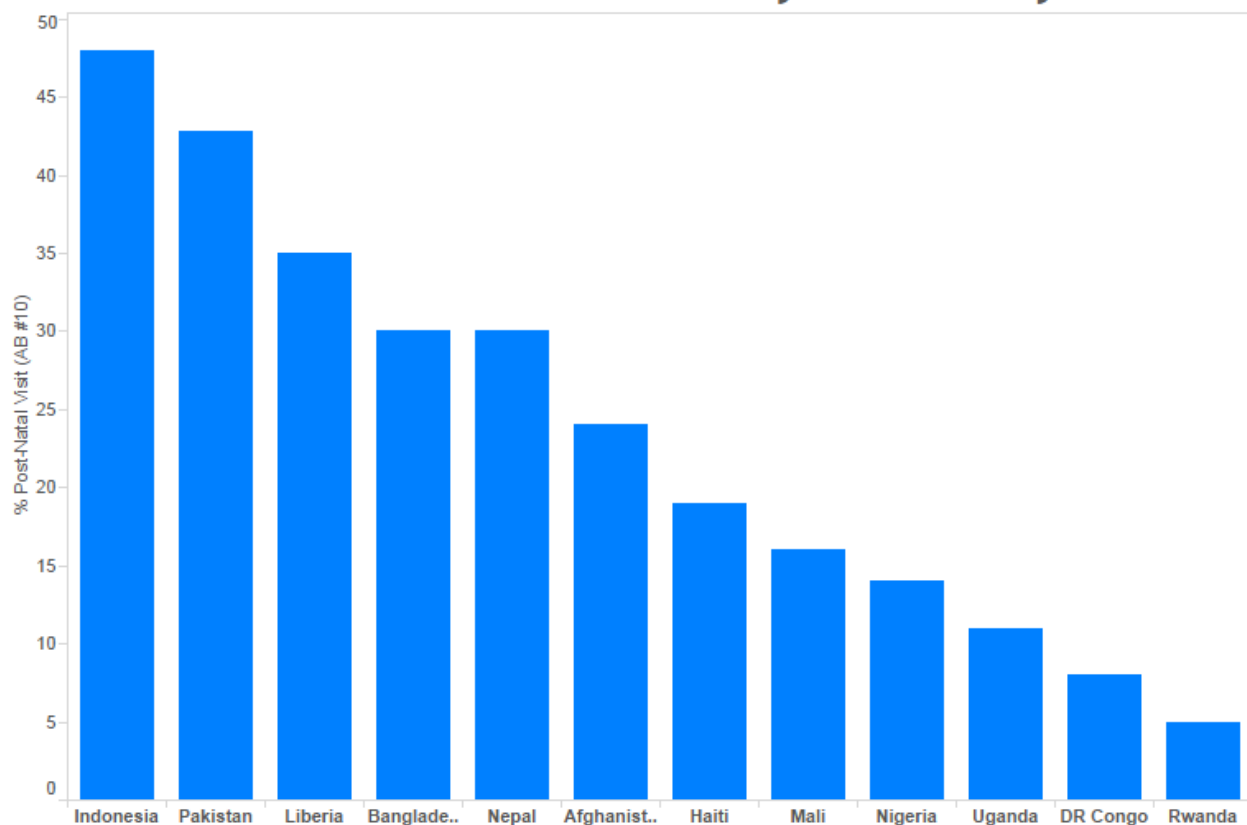
threatening conditions (such as postpartum bleeding or long labor) as well as difficulties in recognizing nonspecific symptoms of newborn illness (lethargy, inability to suckle) (7-11).

- Culturally shared beliefs, such as cultural restrictions on movement outside the home that limit facility-based care seeking, fatalism about newborn survival, viewing pregnancy and pregnancy-related complications as natural and part of the birthing process, and issues of shyness and fear around pregnancy (7,9,12-20)
- Perceptions regarding the effectiveness and overall quality of care available from skilled health providers at local health centers.
- Preference for care from traditional providers or family members, and traditional home remedies; and (7,9, 12, 14, 17, 20, 21-28, 33)
- Limited decision-making power among women, often associated with low education of both the mother and other authority figures such as traditional birth attendants, husbands, women, and mothers. (8,13,22, 7, 15, 18, 20, 25)

Promoting timely recognition and appropriate care seeking for newborn illness is crucial to reducing preventable newborn deaths. The Every Newborn Action Plan (ENAP) has been developed through a consultative process to outline key interventions and strategies to improve neonatal mortality. Each of the 5 strategic objectives includes a strategy for engaging communities and families. Strategic Objective 4 – “Harness the power of parents, families, and communities” – explicitly includes engaging communities and families to improve newborn outcomes.(3)

There are limited data at national level on care seeking behavior for signs/symptoms of newborn illness. Research is underway to develop and test methods to accurately capture this behavior at national levels. In the interim, data on postnatal care within 2 days of birth will be used as a proxy (see graph below).

Acelerator Behavior #10: Proportion of Newborns Receiving Post-Natal Care Within 2 Days of Delivery



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10. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (PMTCT)

Accelerator Behavior: Active demand at household level for universal identification and treatment of HIV-infected pregnant women.

Related Behavior: Health care providers offer testing and appropriate initiation/referral as a routine component of antenatal care. Women on treatment maintain adherence to ART visit schedule and ARV regimen.

Indicators:

- Number and percentage of pregnant women with known status (includes women who were tested for HIV and received their results)
- Number and percentage of HIV-positive pregnant women who received antiretrovirals to reduce risk for mother-to-child-transmission (MTCT) during pregnancy and delivery
- Percentage of infants born to HIV-positive women that receive a virological HIV test within 12 months of birth
- Percentage of PEPFAR-supported sites achieving 90 percent ARV or ART coverage for HIV-positive pregnant and breastfeeding women

Supporting evidence:

Early testing and treatment of pregnant women minimizes the risk of vertical HIV transmission, and thus results in reduced maternal and child mortality rates. Studies have shown that increasing integration of provider-initiated testing and counseling (PITC) with antenatal clinics has improved the uptake of testing among pregnant women, and additional counseling and education on HIV testing further increases uptake in HIV testing and treatment.^{[i][ii]} Other demand creation activities have also been effective in getting pregnant women to know their status and initiate treatment.^{[iii][iv][v]}

In addition to PITC, increased male involvement in programs and support groups have led to increased uptake in PMTCT services. Male involvement has been shown to promote adherence to PMTCT care and treatment, and, in some cases, decrease risky sexual behavior.^{[vi][vii][viii]} Support groups allow for increased dialogue in stigma-free environments and knowledge acquisition on HIV and treatment, which help encourage women to enroll in PMTCT services.^{[ix][x]}

It is well documented that treating pregnant women and HIV-positive mothers reduces mother-to-child transmission of HIV. Programs throughout the world are achieving MTCT rates well below 5 percent, with some populations below 2 percent.^{[xi][xii]} Moreover, treating HIV-infected pregnant women increases the survival of children under 5 who have been exposed to HIV, regardless of the child's HIV status. A rural South African study showed that children born to HIV-infected mothers on treatment had a higher rate of survival compared to those born to mothers who were not on ART. In this setting, following ART roll-out, infant mortality rates dropped among both 16- to 24-month-olds and 24- to 60-month-olds.^[xiii]

The World Health Organization (WHO) recommends Option B+, a PMTCT strategy involving initiation of ART as early as possible, regardless of CD4 count, and lifelong treatment of the mother's infection. Increases in ART uptake, retention, and adherence require targeted behavior change communication in both clinical and community settings. Understanding the local cultural context, including women's perceptions, attitudes, and preferences regarding the relative acceptability of treatment options, is crucial as we work towards the elimination of mother-to-child transmission.

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