World Vision




BabyWASH Toolkit

World Vision International
Version 1
May 2017

ACKNOWLEDGMENTS

This toolkit was collaboratively developed by Jennifer Olsen (consultant), Sue England (Health) and Kristie Urich (WASH), with guidance and vision from World Vision's BabyWASH Working Group from the Global Centre Sustainable Health team: Ana Tenorio, Vika Sargsyan and Erin Jones (ECD), Miriam Yiannakis (Nutrition), John Collett, Ashley Labat and Peter Hynes (WASH), and reviewed by the World Vision (WV) BabyWASH Advisory Group. Thanks to the many experts in the WV community who provided valuable feedback in forming and reviewing this toolkit; it was truly a collaborative process. Funding and support for this initiative was provided by WV Global Centre WASH and Health teams.

INTRODUCTION

BabyWASH is an initiative which aims to improve the integration of water, sanitation and hygiene (WASH) interventions with maternal, newborn and child health (MNCH), nutrition and early childhood development (ECD), to enable a more profound impact on child health outcomes in the first 1,000 days of life. The initiative was developed due to a recognised gap in the integration of programing in these sectors across the partnership. *BabyWASH is not a new programme model and therefore is not a holistic package of all the interventions required in the first 1,000 days*. Instead, this guide highlights a subset of priorities that have been under-emphasized due to historically poor levels of integration and communication between sectors, viewed specifically through a sanitation and hygiene lens.

Emerging research confirms the urgency of addressing an integrated WASH, Health/ Nutrition and Education programme as early as possible in life to facilitate children reaching their full developmental potential. Doing so could potentially:

- Save 32,000 mothers and 405,000 babies each year through more hygienic birth practices. (WHO 2015)
- Reduce the 45% of child deaths each year linked to malnutrition. (WHO 2016)
- Reduce diarrhoea rates by 30-40% through ensuring safe water at point of consumption. (WHO 2014)
- Reduce risk of neonatal mortality by 44% by early initiation of breastfeeding. (Lancet 2014)
- Increase multi-sectoral ownership of ECD to protect the 43% of children in low- and middle-income countries at risk of failing to reach their full developmental potential. (Lancet 2016)

Integration is most important in the first 1,000 days, where MNCH, nutrition, WASH and ECD all play a critical part in child health, yet rarely are combined during programming. **Strategic research conducted for this toolkit reveals the gaps in programming where BabyWASH may have the biggest impact. Therefore, BabyWASH interventions focus on five key hotspots of vulnerability:**

Pregnancy

Labour & Delivery

Newborn Period

Onset of mobility and exploration

Introduction of complementary feeding

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ACRONYMS

BA	Birth Attendant
CHW	Community Health Worker
COMM	Community (Health) Committees
cPMTCT	Community Prevention of Mother-to-Child-Transmission of HIV
CWBO	Child Well-being Outcomes
CF	Complementary Feeding
ECD	Early Childhood Development
EED	Environmental Enteric Dysfunction
HEA	Humanitarian and Emergency Affairs
IDP	Internally Displaced Person
MNCH	Maternal, Newborn, and Child Health
M&E	Monitoring and Evaluation
PD/H	Positive Deviance Hearth
PM	Project Model
SBA	Skilled Birth Attendant
SO	Support Office
TA/TP	Technical Approach/Technical Programme
ttC	Timed and Targeted Counselling
TOT	Training of Trainers
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WV	World Vision
WVI	World Vision International

Purpose of this Guide

Who is this toolkit for?

The BabyWASH toolkit aims to inform organisations looking to close gaps and better integrate WASH, MNCH, nutrition, and ECD programming on the benefits of multi-sectoral actions.

What is the purpose of this toolkit?

This toolkit is **NOT** a new project model, nor is it meant to highlight all of the essential interventions that should occur in the first 1,000 days – it is assumed that many interventions (positive parenting, proper birth spacing, exclusive breastfeeding, etc.) are already occurring.. It also doesn't specifically address the needs of adolescent girls or children with disabilities, although some offices may choose to include these in their own BabyWASH approach, but focuses strictly on the first 1,000 days.

This toolkit **IS** meant to guide organisations or programmes who are designing new programmes, as well as adapting current programming, to help understand the depth of health impact evidence in BabyWASH, as well as to have the tools necessary to identify and implement multi-sectoral actions to strengthen their programming. Each context where BabyWASH is implemented will be different, and multi-sectoral teams should discuss which interventions/ messages are most important to solve gaps in programming.

What is covered in this toolkit?

Section 1: What is the problem BabyWASH is trying to address?

- **Tool 1: Evidence Summary and Briefs** supporting the selected BabyWASH priorities

Section 2: How does BabyWASH solve this problem?

- **Tool 2: Conceptual Framework** to understand the theory behind BabyWASH
- **Tool 3: The 2-2-3 Core BabyWASH Priorities** for the first 1,000 days of a child's life
- **Tool 4: Gap analysis of WV Project Models/Approaches** to show how current programme can be adapted and strengthened for BabyWASH

Section 3: How to implement a BabyWASH programme?

- **Tool 5: BabyWASH Start Up Guide** for organisations to plan a BabyWASH programme
- **Tool 6: Monitoring Indicators** to measure BabyWASH priorities
- **Tool 7: Research Questions** that will strengthen BabyWASH both internally and externally
- **Tool 8: Sector Capacity Building** to summarize key competencies for BabyWASH

Section 1: What is the problem BabyWASH is trying to address?

This section will lay out the evidence behind an integrated approach. It aims to convince stakeholders that a focus on multi-sectoral actions in the first 1,000 days of a child's life is essential for children to experience life in all its fullness.

Tool 1: Evidence Summary and Briefs

Key Purposes:

1. To improve understanding and applicability of BabyWASH in integrated programming and help identify gaps in current programming.
2. To highlight the need for multi-sectoral interventions during the 5 key hotspots.
3. To provide evidence to advocate for BabyWASH to senior leadership, partners and funders.

BabyWASH Overview and Evidence Summary

The first 1,000 days of life are an incredibly vulnerable time period for both mother and child.

For the mother, a healthy pregnancy is the foundation for better health outcomes, which can be improved through access to clean water and sanitation, as well as a decreased physical burden during water collection and being prepared for a "WASH safe" birth. The majority of maternal deaths occur during delivery and in the first week postpartum. Maintaining clean surfaces and reducing the risk of infection by having access to water and sanitation are vital throughout labour and delivery, the first month of life, and through the child's early life, especially as they begin to explore their environment. Almost half of the deaths for children under five occur in the first month of life. Many of these deaths are infection-related and preventable through improved WASH. Additionally, the growing body of evidence supporting EED suggests that reducing environmental exposure to faecal matter in the 1,000-day period may vastly reduce stunting, and consequently chronic undernutrition, as well as improve cognitive development. This is currently best achieved by disrupting EED pathways through improved WASH and greater attention to the importance of early childhood development through healthy caregiver-child interactions as well as hygienic environmental changes.

The opportunities for the greatest impact on morbidity and mortality outcomes for women and children have been identified during five "hotspots" where targeted multi-sectoral programming is essential:

- Pregnancy
- Labour and delivery
- Newborn period
- Onset of mobility and exploration
- Introduction of complementary feeding.

Evidence Briefs

The briefs below summarize the evidence for each hotspot and provide the rationale for the selection of the priority interventions to be looked at from a hygiene lens. For more information on the evidence referenced in these briefs, please see the **Evidence Summary Table** in Appendix 7.

Pregnancy: The Best Start to Life

Summary of evidence

Pregnancy is a particularly vulnerable time for both mother and her unborn child. Access to improved water sources and improved sanitation facilities are associated with decreased maternal morbidity and mortality[1]. Additionally, the physical burden of carrying water has been shown to increase the risk of uterine prolapse, inadequate weight gain during pregnancy, and spontaneous abortion[2]. Pregnant women require about 300 additional calories each day, compounding negative outcomes due to an increased physical burden of water carrying[3]. Additionally, environmental enteric dysfunction (EED) in women of reproductive age may cause inflammation during pregnancy and adverse birth outcomes such as foetal growth restriction and prematurity[4], one of the leading risk factors for neonatal mortality.

Summary of relevant interventions

Interventions at this point include both infrastructural improvement as well as behaviour change interventions. These interventions include:

- **Hand-washing with soap at key times** by the entire household, **including children**. Key times include 1. Before handling food, 2. Food preparation, 3. Before feeding, 4. After using sanitation facilities, 5. After handling faeces such as a child's, 6. After handling livestock.
- **Access to and use of improved water sources**. This intervention has moderately strong supporting evidence; however more rigorous research is needed to show impact in relation to water source distance. This may require infrastructural work to establish an improved water source closer to home, alleviating both distance walked and weight of water burden.
- **Access to and use of improved sanitation facilities** by the entire household. This intervention has moderately strong evidence to support its use. It is likely that this intervention will have a greater impact in conjunction with hand-washing with soap. Behaviour change interventions are vital in order to increase the effective use of WASH infrastructure and the sustained adoption of good sanitation and hygiene practices.
- **Birth Preparedness.** This intervention may involve the entire household, and ensures the mother has access to sufficient water, sanitation facilities, hygiene supplies, a plan for delivery, as well as clean birthing provisions prior to birth.

[1] Cheng et al. 2012. *An ecological quantification of the relationships between water, sanitation and infant, child, and maternal mortality.* Environmental Health, vol. 11, no. 4. 1. https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-11-4

[2] Campbell et al. 2015. *Getting the basics right- the role of water, sanitation and hygiene in maternal and reproductive health, a conceptual framework*. Tropical Medicine and International Health. Volume 20 No 3 PP 252-267. http://researchonline.lshtm.ac.uk/2026604/

[3] WHO. 2001. *Healthy Eating during Pregnancy and Breastfeeding: Booklet for Mothers*. World Health Organization. http://www.euro.who.int/__data/assets/pdf_file/0020/120296/E73182.pdf

[4] Prendergast et al. 2015. *Assessment of environmental enteric dysfunction in the SHINE trial: methods and challenges*. CID. Supplemental Article. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4657593/

Labour and Delivery: A Clean Birth

Summary of evidence

Labour and delivery is a time when both mother and child are at great risk of unexpected complications, infection, and death. 11 to 17 percent of maternal deaths occur during birth, and many more in the first week post-partum[5]. Of the estimated 303,000 maternal deaths every year, approximately 10.7% or 32,400 are related to infection[Error! Bookmark not defined.]. One study shows that women who give birth in unsanitary conditions are at a threefold risk of maternal mortality, in both home and facility births[6]. Another showed that women who bathe before delivery are almost three times less likely to develop sepsis[7]. Though this evidence is limited, availability of WASH services and practices in general during birth have been shown to be very important to health outcomes. Clean birth practices show moderately strong evidence of reducing neonatal sepsis death by 15% when delivered at home, and 27% when delivered at a facility[8]. Hand-washing by both mother and birth attendants decreases the risk of neonatal death by more than 40%[9], tetanus by more than 36%[10,11], and cord infection by 49%[12].

Summary of relevant interventions

Interventions for this time period target both facility and home births, with emphasis on hygiene for both mother and birth attendant. These interventions include:

- **Clean birth practices**, commonly known as the WHO's 6 Cleans: clean hands of attendant and mother, clean perineum (region from anus to vulva), clean delivery surface under the mother, clean blade for cord cutting, clean cord tying and clean towels to dry then wrap baby
- **Access to and use of improved sanitation facilities.** At healthcare facilities, this is defined as access to facilities that are not shared and are available in the delivery room. At home, specifically for rural communities, this is defined as facilities that are not shared with other families. This highlights the need for both infrastructural as well as behaviour change interventions in order to have the greatest impact.
- **Access to clean water** for mother during delivery and post-delivery. Though no precise standard currently exists for how much water is needed during clean labour and delivery, the WHO recommends 100 litres per intervention in the maternity unit. More research is needed to clarify or support this estimate.

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[5] Say et al. 2014. *Global causes of maternal mortality: a WHO systematic analysis*. Lancet Glob Health; 2: e323-33. http://www.thelancet.com/journals/langlo/article/PIIS2214-109X(14)70227-X/fulltext

[6] Benova et al. 2014. *Systematic review and meta-analysis: association between water and sanitation environment and maternal mortality*. Tropical Medicine and International Health. 19(4): 368-387 http://doi.org/10.1111/tmi.12275

[7] Winani et al. 2007. *Use of a clean delivery kit and factors associated with cord infection and puerperal sepsis in Mwanza, Tanzania.* Journal of Midwifery & Women's Health, vol. 52, no. 1, pp. 37-43. http://www.sciencedirect.com/science/article/pii/S152695230600451X

[8] Blencowe, H. et al. 2011. *Clean birth and postnatal care practices to reduce neonatal deaths from sepsis and tetanus: a systematic review and Delphi estimation of mortality effect*. BMC Public Health, 11(Suppl 3): S11 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3231884/

[9] Rhee, Mullany, et al. 2008. *Impact of maternal and birth attendant hand-washing on neonatal mortality in southern Nepal*, Pediatr Adolesc Med, vol. 162, no. 7, pp. 603-08. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2587156/

[10] Umesh Parashar et al. 1998. *Topical antimicrobials applied to the umbilical cord stump: a new intervention against neonatal tetanus*," International Journal of Epidemiology, pp. 27:904-908. http://ije.oxfordjournals.org/content/27/5/904.long

[11] Bennett, et al. 1997. *Protective effects of topicl antimicrobials against neonatal tetanus*. International Journal of Epidemiology, vol. 26, no. 4. http://ije.oxfordjournals.org/content/26/4/897.full.pdf

[12] Mullany, Darmstadt et al. *Risk factors for umbilical cord infection among newborns of southern Nepal*. American Journal of Epidemiology, October 2006. http://aje.oxfordjournals.org/content/165/2/203.full

Summary of evidence

About 40% of deaths for all children under five occur during the neonatal period, most of which are preventable[13]. Sepsis and infection related newborn deaths account for 15% of all newborn deaths annually -- or 420,000 newborns every year[14]. Sepsis has been shown with moderate strength to be reduced by 40% with clean postnatal practices[15]. Additionally, some evidence shows that the application of 7.1% chlorhexidine digluconate (delivering 4%) postnatally as one component of umbilical cord care reduces both neonatal mortality and cord infection**Error! Bookmark not defined.** Some studies show that having sufficient water quantity is necessary to prevent infection in both mother and child[16].

Summary of relevant interventions

Interventions in this time period include:

- **Clean postnatal practices** are consistent with clean birth practices, aiming to reduce infection for mother and child:
    - **Hand-washing with soap at key times** by the entire household, **including children**,: 1. Before handling food, 2. Food preparation, 3. Before breastfeeding, 4. After using sanitation facilities, 5. After handling faeces such changing baby's diaper, 6. After handling livestock. In particular, care should be taken to wash hands prior to handling the newborn.
    - **Clean cord care.** There is strong evidence supporting clean and dry cord care but newer evidence that the application of 7.1% chlorhexidine digluconate (delivering 4%) applied immediately after birth and in the first 7 days in high burden neonatal mortality settings, reduces neonatal mortality and cord infection
    - **Personal hygiene for mother and child**. There is moderate evidence supporting the reduction of sepsis and other infections through this intervention.
- **Exclusive breastfeeding** for 6 months. Half of diarrhoea episodes and a third of respiratory diseases can be prevented by immediate exclusive breastfeeding for six months.[17] This is a critical intervention for improving child health.
- **Access to and use of improved water sources**. This intervention has moderately strong evidence to support its use, particularly for treating water at the point-of-use.
- **Access to and use of improved sanitation facilities** by the entire household. This includes proper disposal of child faeces, and interventions to limit child faeces in the home and in child play areas. Additionally, it is likely that this intervention will have a greater impact in conjunction with hand-washing with soap.

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[13] USAID. 2012. *Better Intrapartum Practices to Reduce Newborn Infection: The Problem of Newborn Infection*. MCHIP Brief. https://www.k4health.org/toolkits/eonc/better-intrapartum-practices-reduce-newborn-infection-meilleures-pratiques-pendant-le

[14] Liu et al. 2015. *Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis.* Lancet; 385:430-40 http://www.who.int/immunization/diseases/tetanus/Lancet-2013-Global-child-mortality.pdf

[15] Blencowe, H. et al. 2011. *Clean birth and postnatal care practices to reduce neonatal deaths from sepsis and tetanus: a systematic review and Delphi estimation of mortality effect*. BMC Public Health, 11(Suppl 3): S11 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3231884/

[16] Winani et al. 2007. *Use of a clean delivery kit and factors associated with cord infection and puerperal sepsis in Mwanza, Tanzania.* Journal of Midwifery & Women's Health, vol. 52, no. 1, pp. 37-43. http://www.sciencedirect.com/science/article/pii/S152695230600451X

[17]Victora, Cesar G et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The Lancet. Volume 387, Issue 10017, 475 – 490 http://dx.doi.org/10.1016/S0140-6736(15)01024-7

Onset of Mobility and Exploration: The Need for a Clean Environment

Summary of evidence

The onset of mobility and exploration is estimated to begin around three months of age. It is characterized by increased movement and curiosity as motor and cognitive skills develop, and frequent hand-to-mouth behaviours that enable infants to investigate and learn about the environment. While this is healthy developmental activity, it amplifies the risk of contamination from the environment. 250 million children per year (43%) are at risk of not reaching their developmental potential due to poverty and stunting, which negatively affects cognitive, motor and socio-emotional skills[18]. These impairments translate to limited school achievement throughout childhood and lower societal functioning as adults. Environmental Enteric Dysfunction (EED) is believed to be an underlying cause of stunting, and may account for continued growth restriction unaffected by traditional diet and disease control interventions[19]. New and emerging studies suggest that limiting the main pathways for EED may greatly reduce EED, and consequently, stunting. Some studies show that children who live in "cleaner" (e.g., more sanitary and hygienic) households have reduced parasitic infections, less severe EED and greater linear growth[20]. Limited research suggests that the proper disposal of faeces (both human and animal) in the immediate household environment can reduce diarrhoeal disease in children by more than 30%[21]. Early evidence also suggests that EED may reduce oral vaccine efficacy, though more research is needed in this area[22],[23].

Summary of relevant interventions

New studies supporting EED recommend WASH interventions that can disrupt the usual pathways to EED (faecal-oral exposure). These interventions include:

- **Hand-washing with soap at key times** by the entire household, **including children**. Key times include 1. After defecation/use of sanitation facilities, 2. After cleaning a child's faeces, 3. Before preparing food, 4. Before eating, 5. Before feeding a child, including breastfeeding or complementary feeding, and 6. After handling livestock. **In particular, care should be taken to wash the child's hands after exploratory play, where evidence suggests the greatest exposure to environmental pathogens, including faecal matter, occurs.**
- **Access to and use of improved sanitation facilities** by the entire household. This includes proper disposal of faeces, and interventions to limit faeces in the home and in child play areas. It is likely that this intervention will have a greater impact in conjunction with hand-washing with soap.
- **Provision of sanitary and age-appropriate play/teething objects and clean and protected play spaces**. Expert opinion encourages the use of exploratory and learning play to improve child development. This intervention prioritises clean and sanitary play objects and spaces.

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[18] Black, Maureen et.al. 2016. *Early Childhood Development Coming of Age: science through the life course*. The Lancet. http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31389-7/fulltext

[19] Crane et al. 2015. *Environmental enteric dysfunction: An overview*. Food and Nutrition Bulletin. 36 (1 0): S76-S87. http://www.ncbi.nlm.nih.gov/pubmed/25902619

[20] Lin et al. 2013. *Household environmental conditions are associated with enteropathy and impaired growth in rural Bangladesh.* American Journal of Tropical Medicine and Hygiene 89. 130-137. http://www.ajtmh.org/content/89/1/130.

[21] Cairncross et al. 2010. *Water, sanitation and hygiene for the prevention of diarrhoea*. Int Journ Epi. 39:i193-i205. http://doi.org/10.1093/ije/dyq035

[22] Levine. 2010. *Immunogenicity and efficacy of oral vaccines in developing countries: Lessons from a live cholera vaccine. BMC* Biology. 2010; 8:129. http://bmcbiol.biomedcentral.com/articles/10.1186/1741-7007-8-129

[23] Naylor, C. et al. 2015. *Environmental enteropathy, oral vaccine failure and growth faltering in infants in Bangladesh*. Elsevier BioMedicine. http://doi.org/10.1016/j.ebiom.2015.09.036

Summary of evidence

Breastfeeding is incredibly important for a child's health, providing nutrition and a natural defence against many infections. Additionally, breastfeeding delays a child's exposure to an unclean environment, which increases their risk of infection, malnutrition, and death. At six months, not before, the child should begin complementary feeding and continue to breastfeed. Adequate complementary feeding can avert 6% of child death[24]. However, the introduction of dirty water or water stored in dirty containers as well as food that may not be hygienically prepared or fresh, introduces new pathways for infection and harm. Psychosocial stimulation is also an essential intervention as a study finds that it can mitigate the effects of stunting[25].

Summary of relevant interventions

WASH interventions are important for navigating the compounding risks during this time period. These interventions include:

- **Hand-washing with soap at key times** by the entire household, **including children**. Key times include 1. Before handling food, 2. Food preparation, 3. Before breastfeeding and complementary feeding, 4. After using sanitation facilities, 5. After handling faeces such as a child's, 6. After handling livestock. **For complementary feeding in particular, special care should be taken to hand wash at every key time, every day to protect the child from infection.**
- **Access to and use of improved sanitation facilities** by the entire household. This includes proper disposal of child faeces, and interventions to limit child faeces in the home and in child play areas. It is likely that this intervention will have a greater impact in conjunction with hand-washing with soap.
- **Access to and use of improved water** by the entire household.
- **Education on the provision of fresh and hygienically prepared complementary foods**. This intervention has been shown to improve height gain, Height for Age (or HAZ scores) and weight gain in food secure populations, as well as Weight for Age (or WAZ scores) and significantly reduced the rates of stunting in food insecure populations.
- **Maintaining a clean eating area as well as a clean and protected play area**. As stated previously, though evidence is weak, expert opinion supports domestic hygiene in order to limit the pathways for EED and other diminishing illnesses. Appropriate play and nurturing care is essential for child development and needs to be done in as hygienic an environment as possible.

[24] Jones et al. 2003. *How many child deaths can we prevent this year?* Lancet. Vol 362. http://www.who.int/maternal_child_adolescent/documents/pdfs/lancet_child_survival_prevent_deaths.pdf

[25] Gertler et al. 2014. *Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica*. Science 344(6187): 998-1001. http://www-ncbi-nlm-nih-gov.ezproxy.bu.edu/pmc/articles/PMC4574862/

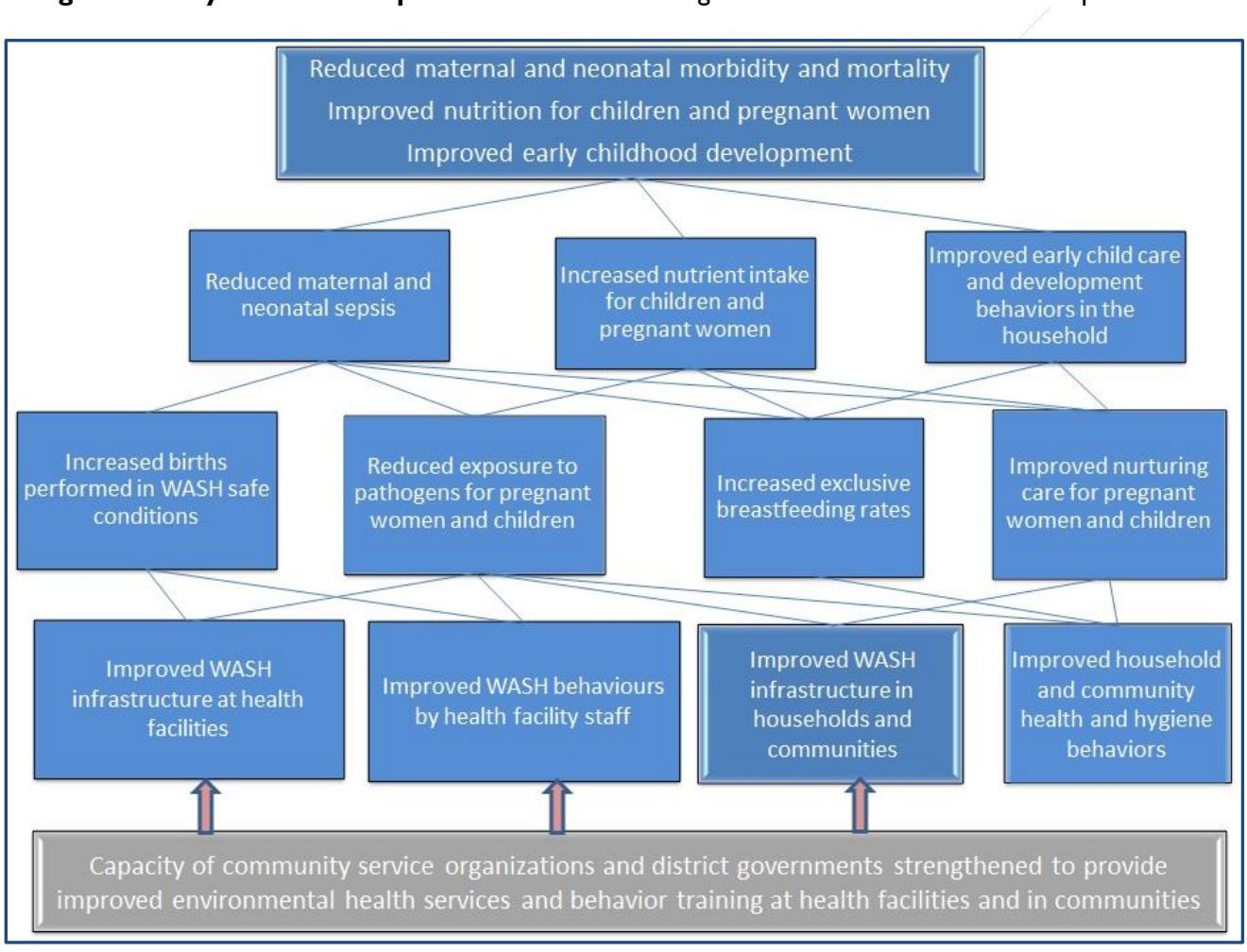
Section 2: How does BabyWASH solve this problem?

This section lays out the theory behind BabyWASH and the key priorities its integrated focus aims to address.

Tool 2: Conceptual Framework

Key Purpose: To illustrate the connection between activities at the health facility and community level to lead to reduced stunting and mortality rates, and overall increased child cognitive development due to improvement of health.

Figure 1: BabyWASH conceptual framework with high level health outcomes at the top



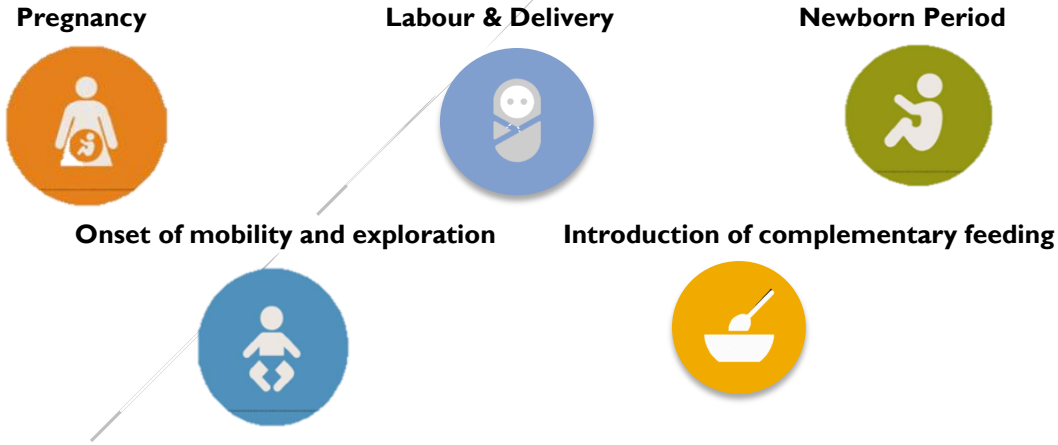
Tool 3: 2-2-3 BabyWASH Intervention Priorities

The seven BabyWASH intervention priorities, known as the 2-2-3, outline essential areas to consider when planning for BabyWASH. They were selected through an analysis of evidence and identification of common programme gaps focusing on the first 1,000 days of a child's life. These interventions are focused on reducing sepsis (APPENDIX 5: Sepsis Infographic) and preventing environmental enteric dysfunction (EED) (APPENDIX 4: EED Infographic). Interventions should be implemented in a collaborative fashion as sectors work together to impact child health and well-being.

Sepsis prevention priorities are focused on preparing for a clean birth at home and at facility, and ensuring that facilities and equipment at health facilities are adequate to ensure a sanitary environment. EED prevention priorities are focused on the home and community to prepare and utilise 'clean play spaces' and separate children from an unhygienic environments. Exact interventions to address EED will need to be explored through operational research.

Foundational interventions: The BabyWASH priorities build on our current or "foundational interventions"[26] for health and nutrition, WASH and ECD. These priorities are intended to address gaps and achieve integration across existing foundational interventions to strengthen focus and impact for children in the first 1,000 days. Please see appendix 3 for short descriptions of each sectors core or foundational interventions. BabyWASH priorities can strengthen current programming through a focus on young children, EED and sepsis, and identify gaps where new interventions need to be prioritized by one or more of the sectors.

The BabyWASH priorities span the following five critical hotspots, where children are most vulnerable to the effects of an unhygienic environment:



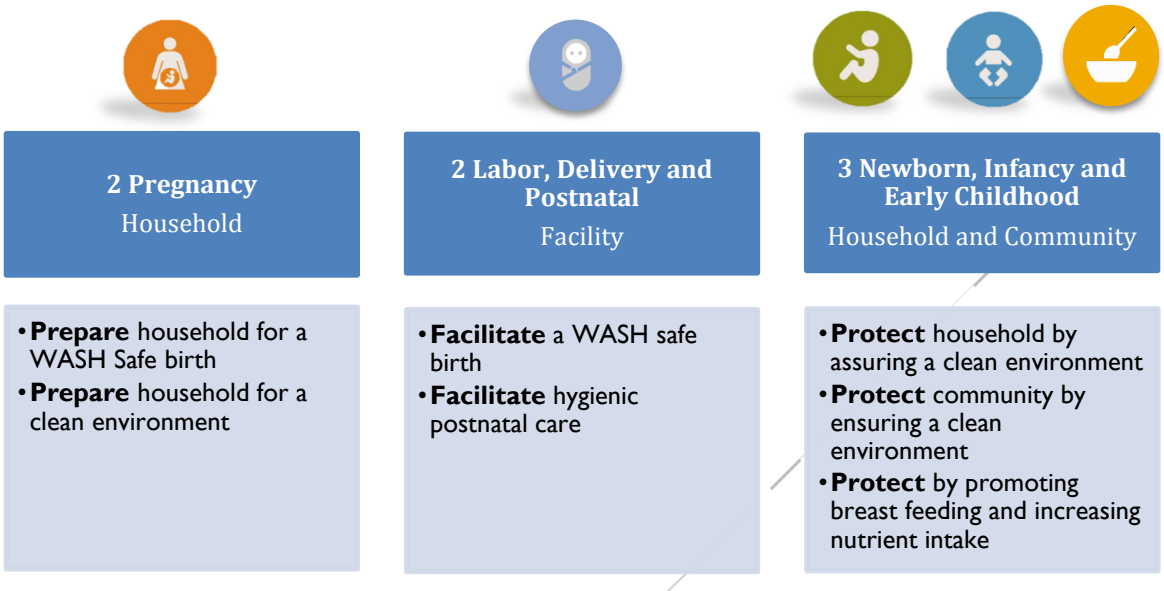
Key Purpose of BabyWASH intervention priorities:

1. To highlight the importance of WASH and environmental sanitation and hygiene in achieving improved child well-being outcomes.
2. To highlight the gaps in current programming and bring attention to essential actions to prevent sepsis and EED that are not currently prioritised.

[26] Foundational interventions are those such as in the WV health and nutrition 7-11 strategy, and are already recommended in each sector because they are evidence based, cost effective and community focused. For example, in our health and nutrition 7-11 strategy, adequate diet for pregnant mothers, full immunisation for infants, ORS and Zinc for management of diarrhoea, and proper birth spacing are all promoted as core interventions. In ECD, stimulation and play is a core intervention. In nutrition, adequate iron and exclusive breastfeeding are core interventions. And in WASH, hand-washing with soap and access to improved water, sanitation and hygiene are core interventions. These core interventions should be strengthened through BabyWASH considerations.

3. To facilitate joint planning of multi-sectoral actions to strengthen prevention of EED and sepsis.
4. To facilitate thinking toward integrated project designs, research and approaches which could be piloted or trialled.
5. To provide a framework that could be proposed in grant opportunities.

Figure 2: The 2-2-3 BabyWASH Priorities



Definitions:

- Prepare: In order to protect an infant from coming into contact with contaminants that he/she may ingest, leading to environmental enteric dysfunction, a household must prepare. This includes storing water effectively, reducing open defecation in the community, and innovating for clean play spaces and toys for children.
- Facilitate: Delivery must take place in a clean environment to prevent sepsis for both mother and baby. This can be facilitated in a health facility by ensuring water and sanitation are available in the delivery and postnatal wards, including bathing shelters. For women who do not stay in the facility, postnatal cleanliness should be facilitated through kits to take home and hygiene messaging.
- Protect: Once the infant is in the household, they must be protected from ingesting harmful contaminants. A household should have already prepared for this. Handwashing, exclusive breastfeeding, proper disposal of infant faeces, and positive parenting including a clean space are all important components.

Tool 4: BabyWASH Gap Analysis

This is a simple tool that programmes or organisations can adapt and utilise to assess current BabyWASH areas already covered in existing programmes and discover gaps where BabyWASH interventions can be inserted.

Key Purposes:

- Assist organisations or programmes in reviewing current interventions and identify BabyWASH gaps
- Help identify possible adaptations needed of current models to more directly reflect BabyWASH priorities

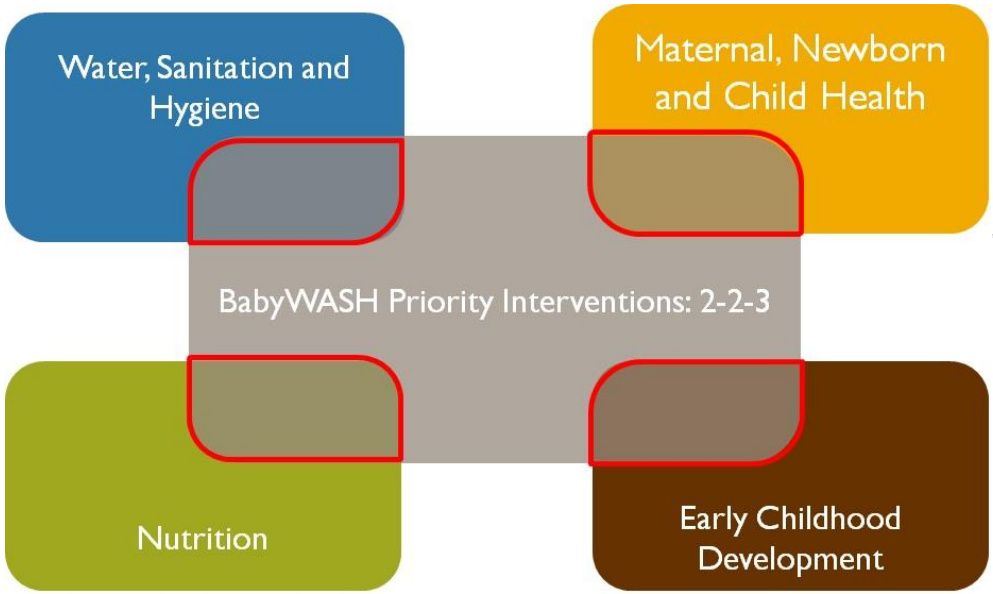
Current intervention gap analysis tool

Sector	Intervention	Brief description of intervention	BabyWASH Strengths	BabyWASH Gaps
MNCH				
Nutrition				
WASH				
ECD				

Section 3: How to Implement a BabyWASH Programme

The heart of BabyWASH lies in deciding as a group on multi-sectoral actions that can be accomplished to prevent sepsis and EED. As figure 3 shows, these actions can be undertaken to strengthen an individual sector's fulfilment of BabyWASH priorities by focusing current work on children under two and environmental hygiene (red areas), or in creating new actions that fill gaps in current levels of programming and are essential for reducing sepsis and EED (grey area).

Figure 3 – How to prioritise BabyWASH actions



Different levels of multi-sectoral action	
Information	Exchange of information between sectors working in the same area
Cooperation	Incidental, causal, reactive, often led by the health sector
Coordination	Joint effort working towards adjustments of policies and programmes in each sector
Integration	Defining together a new policy or programmes from the beginning

In Uganda, for example, WVI sector teams reviewed their own programming and listed out the indicators they were already using to measure their programming that connected to BabyWASH. They then took the time to share these with the other sectors, and common indicators were discussed. This increased level of communication led to the ability to work together more closely to strengthen current actions in support of common indicators, and identify what essential actions were not yet in any one sector's programming. The team ended up at the coordination level for prioritising multi-sectoral actions. The tools in this section will allow a country office team to go through a similar process to Uganda in defining their own programming gaps, and prioritizing actions that could be accomplished to more directly impact the BabyWASH priorities.

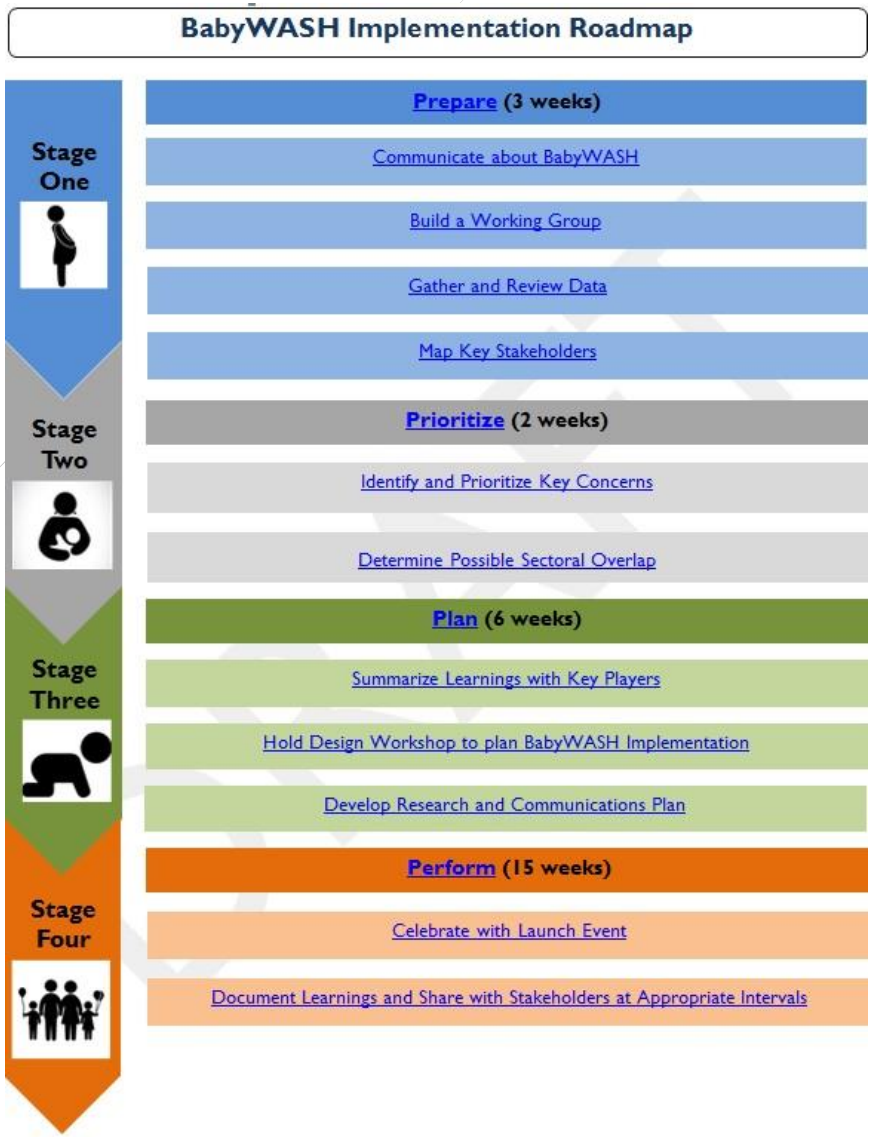
Tool 5: BabyWASH Start-up Guide

Key Purposes:

1. Assist country office in forming a multi-sectoral working group
2. Walk through a process that will help in 'starting up' multi-sectoral actions in support of the BabyWASH Priorities

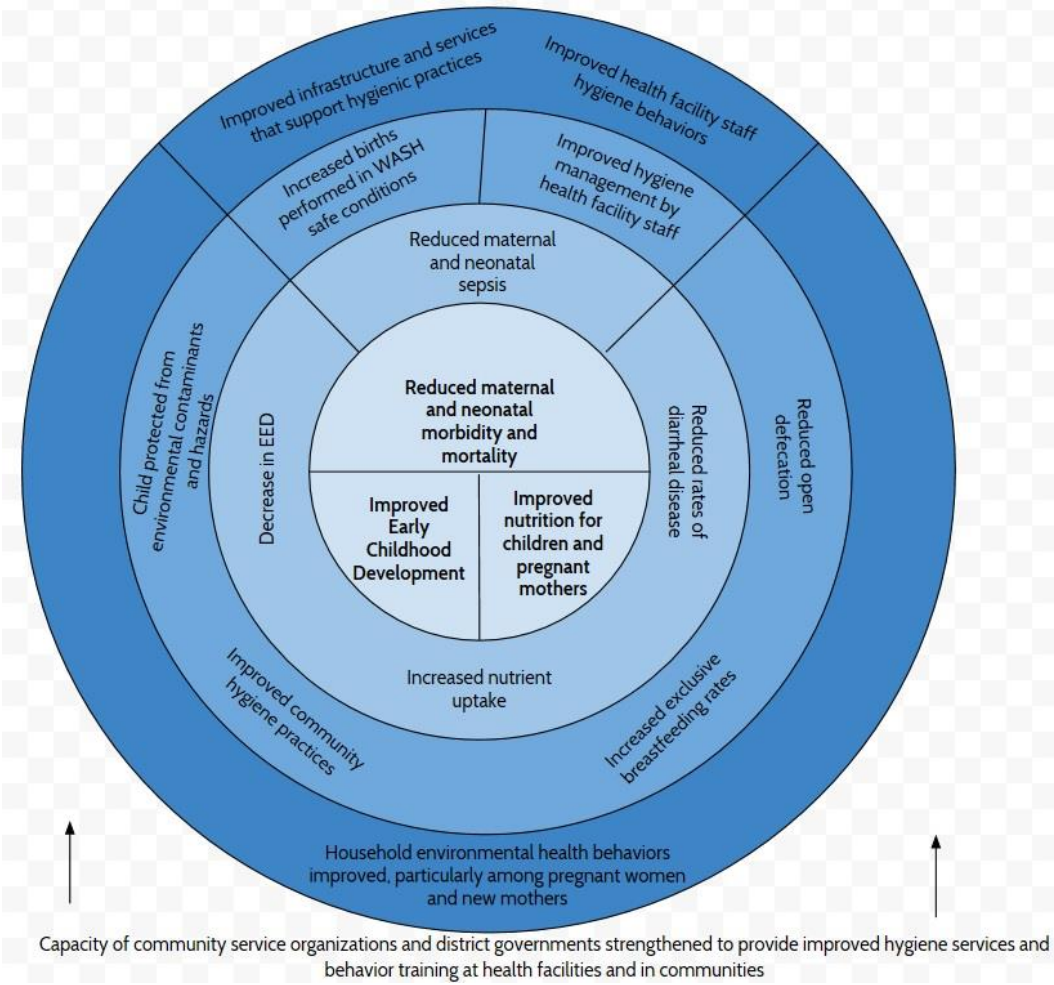
The BabyWASH Start Up Guide is a tool developed for World Vision with potential relevance to the country offices of other organisations. It takes decision makers through creating a multi-sectoral team, discussing how to best fill gaps and the best ways to work together. It also guides teams through considerations for sharing their learnings with within their own organisation and other implementing organisations in the area.

Every programme that implements a BabyWASH programme will do it differently. Therefore, the Start Up Guide is meant to be a framework onto which each country can build its programme. Changes are welcome to any of the sections and any of the steps as area experts see fit.



In order to show the interconnectedness of interventions, we have visualized the theory of change below in a circular model. It shows more clearly than the traditional boxed method that all sectors are needed to full achieve the goals in the centre of the circle.

Figure 4: Theory of Change



Tool 6: Indicators

Key Purposes:

1. To answer key questions about BabyWASH programming including:
    a. Are the key interventions influencing behaviour change at the home and health facility?
    b. Is behaviour change influencing a more hygienic environment at the home and health facility?
    c. Are key interventions leading to improvements in near and/or long term health outcomes?
    d. Are key interventions and anything else (existing programming?) leading to improvements in near and/or long term health outcomes?
    e. What else are we learning that will help improve the design and delivery of interventions?
    f. What unintended benefits or unintended consequences occurred? What can we learn from these?
2. To report to donors funding BabyWASH and assist in developing dollar handles and products that can be used for fundraising.
3. To facilitate BabyWASH integration into project design, monitoring and evaluation

How to use this tool:

Below are the suggested indicators a programme could use to answer key questions about BabyWASH programmes. The indicators you select will depend on the actions prioritised by your BabyWASH team. These indicators measure outputs and intermediate outcomes that lead to the impact indicators listed above. For example, if you are only working at the household level to prepare for pregnancy and protect children during the postnatal period, select from the indicators for those corresponding interventions. If you intend to do future work in health facilities but have not yet started, incorporating these indicators into your baseline could help establish a foundation by which to measure progress by.

Please note that there will be a companion guide that has detailed definitions and guidance for how to measure, when to measure, and with what tools.

Notes:

- This is NOT an illustrative logframe. Instead this is presented as a menu of key indicators to incorporate into your existing logframes for BabyWASH. If you are building a BabyWASH specific project or programme, you may use these indicators as a starting point for your logframe and may reach out to the BabyWASH working group if you need any assistance. Consulting the ToC (Figure 1) should assist with building the logic as well.
- Suggested measurements in **bold blue** are outcome indicators
- Suggested measurements in orange can be measured at the output and outcome level
- Suggested indicators in black are output indicators
- Take note of the annotated letters that correspond to specific notes, see section below table
- The same indicators can be used to measure implementation results of the *Prepare household for a clean environment* intervention and the *Protect households by assuring a clean environment intervention.*

2-2-3 BabyWASH Intervention Priorities and Suggested Measurements

Theme	Prepare		Facilitate		Protect		
Life-course stage	Pregnancy		Labour and Delivery		Newborn, Infancy and Early Childhood		
Setting	Household		Facility		Household & Community		
Intervention	Prepare household for a WASH safe birth	Prepare household for a clean environment	Facilitate a WASH safe birth	Facilitate hygienic postnatal care	Protect household by assuring a clean environment	Protect community by ensuring a clean environment	Protect by promoting breastfeeding and increasing nutrient intake
Indicators	**# and % of households with pregnant women that have a clean birth kit available for delivery**	**# and % of households free from trash and faeces around the home**	# and % of health facilities that have piped water into the delivery room	# and % of health facilities that have piped water into postnatal area	*Same indicators under 'Prepare household for a Clean Environment' in the Prepare-Pregnancy-Household phase*	# and % of communities declared open defecation free	**Proportion of children exclusively breastfed until 6 months of age**
	# and % of pregnant women and secondary caregivers who received counselling on preparing for a WASH-safe birth	**# and % of caregivers who can state 3 ways to keep the HH environment clean to protect newborns and CU5 from diarrhoea**	**# and % of health facilities that have appropriate amount of water safely stored in delivery room**	**# and % of health facilities that have appropriate amount of water safely stored in postnatal area**			**# and % of newborns immediately and continually breastfed until 6 months**

2-2-3 BabyWASH Intervention Priorities and Suggested Measurements

Theme	Prepare		Facilitate		Protect		
Life-course stage	Pregnancy		Labour and Delivery		Newborn, Infancy and Early Childhood		
Setting	Household		Facility		Household & Community		
	# and % of pregnant women and secondary caregivers who received counselling on clean postnatal practices	**# and % of parents or caregivers who practice appropriate handwashing behaviour at key times**	# and % of health facilities that have an improved, non-shared, toilet dedicated for use by pre- and post-natal women[27]		*Same indicators under 'Prepare household for a Clean Environment' in the Prepare-Pregnancy-Household phase*		**% of children 6-23 months consuming minimum adequate diet (disaggregated by gender)**
	# and % of pregnant women and secondary caregivers who can report the 6 cleans for a WASH-safe birth	**# and % of caregivers that report washing their children's hands at key times**	# and % of health facilities that have handwashing facilities, with soap and water, available in the delivery room	# and % of health facilities that have handwashing facilities, with soap and water, available in the postnatal area			
		# and % of parents or caregivers with children 0-23 months who report that their child's faeces are safely disposed of	# and % of health facilities with 3 separate bins to manage healthcare waste in delivery room	**# and % of infants who had their umbilical cord stump treated with chlorhexidine**			

[27] Dedicated use by pre- and post-natal women and within 5 metres of pre- and post-natal areas of health facility. It is encouraged that these facilities be within the pre- and postnatal areas, as much as possible. Data can be analyzed on proximity and compared to health outcomes in an evaluation to better understand relationship of distance and health outcomes.

2-2-3 BabyWASH Intervention Priorities and Suggested Measurements

Theme	Prepare		Facilitate		Protect		
Life-course stage	Pregnancy		Labour and Delivery		Newborn, Infancy and Early Childhood		
Setting	Household		Facility		Household & Community		
		# and % of households that store and remove water safely from a safe storage container	**# and % of healthcare facilities which report no stock-out of key relevant Clean Birth essential drugs and commodities**	# and % of health facilities with adequate bathing facilities available for postnatal women			
		# and % of households that have low or intermediate risk water quality (B)	**# and % of skilled birth attendants who can state the 6 cleans for a WASH-safe birth (C)**				
			# and % of health facilities that have low or intermediate risk water quality in delivery room (B)	**# and % of health facilities that have low or intermediate risk water quality in postnatal area (B)**			

NOTES

A. Need to develop and pilot use of HH environmental hygiene checklist (observation)

B. According to WHO and National standards, disaggregate by ranges for analysis: low (<1 cfu per 100 mL), intermediate (1-10 cfu per 100 mL), high (101-11 cfu) and very high (>100 cfu) [units: E. coli/100ml]

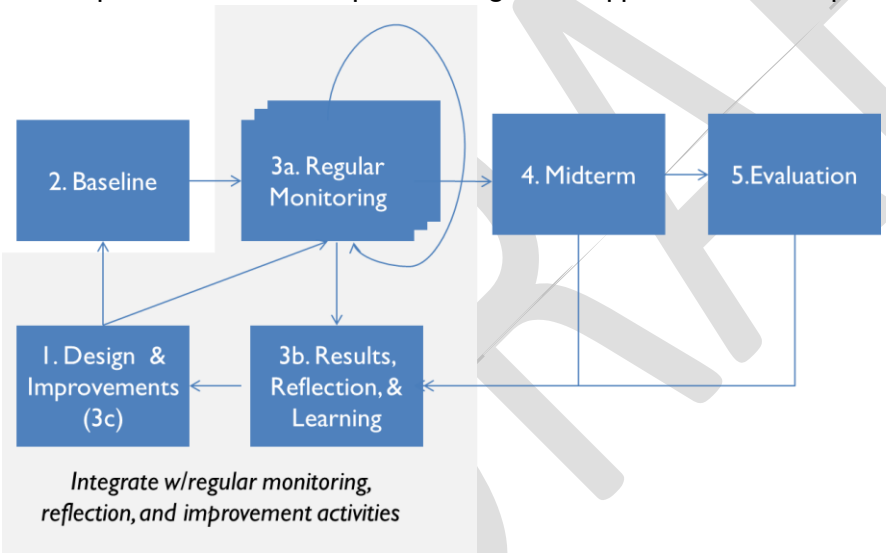
C. SBAs are health professionals that include nurses, midwives, and doctors.

D. Need to explore other indicators to measure a clean community environment. ODF is the standard indicator for WASH one, but need operational research to illuminate interventions and indicators feasible for improving community environmental hygiene

The indicators recommended for BabyWASH monitoring and evaluation assumes that standard indicators are already being measured as part of foundational project models that cover the areas of WASH, Health, Nutrition, and ECD. The recommended indicators for BabyWASH go beyond these foundational indicators to ensure that services are reaching the specific needs of mothers and newborns in the first 1000 day period. Contextualization and adjustment of tools may be necessary to monitor these BabyWASH indicators effectively. More complete BabyWASH tools will be developed as we gain more experience with this method. Please see appendix 7 for some initial considerations.

Monitoring System

It is recommended that the indicators under the prepare, facilitate, and protect categories be monitored 1-2 times per year. The impact indicators should be measured once at baseline and again at five years later at evaluation, as it will take time to assess a meaningful change in stunting and mortality. Diarrhoea prevalence, however, can be measured again at midterm and is recommended if the programme already has a midterm planned. In the meantime, regular monitoring and reflection by key stakeholders including community members and leaders, VHTs or CHWs, and healthcare professionals, should provide insight into opportunities for improvement.



All BabyWASH interventions should work towards the defined list of impact indicators described below.

Figure 5: Impact Indicators for BabyWASH
• Prevalence of stunting in children under 5 years of age • Prevalence of diarrhoea in children under 5 years of age • Neonatal mortality rate • Infant mortality rate • Under five mortality rate • Maternal mortality rate • Percent of children (boys and girls) developmentally on track for cognitive, language, motor sub-scales • Percent of children under 5 experiencing safe, positive and stimulating home learning environment

Tool 7: Research Considerations

Key Purpose:

1. Provide guidance on the types of research required to contribute to strengthening the evidence base of effective BabyWASH interventions

Globally, evidence on how multi-sectoral actions contribute to the outcomes proposed in BabyWASH is lacking. Some of the interventions in BabyWASH are new and need to be studied in order to contribute to our learning and to be shared with the global BabyWASH community. Therefore, studying and sharing what we learn must be prioritised. There are many questions to answer which require various levels of investment dependent on a projects scope and budget.

It is advised to include a research agenda from the beginning of any BabyWASH intervention, engage academic partners to support the research and budget for this. The guidance below is intended to facilitate selection of appropriate academic partners, budgeting, scoping, timeline, internal capacity, and study design considerations. Development of case studies and other qualitative studies for publication is encouraged.

Formative Research

One of the recognized weaknesses of BabyWASH is the gaps in studies showing successful interventions which promote 'clean play spaces.' The evidence that EED contributes to stunting is fairly strong, although the exact causal pathway is still being researched. However, the best way to keep young children from interacting with an unhygienic environment is not well understood. For example, penning animals to keep their faeces away from children is difficult because then it is necessary to buy feed for the animals. However, penning animals is a foreign concept to many communities in the countries we are likely to implement BabyWASH and may not be feasible or practical. It is therefore important that all BabyWASH programmes consider formative research components to explore what types of messages and interventions may be acceptable, and share the results widely.

One method is through the Trials of Improved Practices (TIPs) methodology promoted by the Manoff group, in which a menu of different interventions is trialled in a community. Enumerators visit the homes of the implementing families multiple times to assess which interventions are successful and what the key barriers are. This can be a time intensive process so other formative research can be explored. It is essential that this research is shared as it will help inform programming for other organisations and also is of great interest to the global community. You can learn more about TIPs HERE.

Operational / Implementation Research

Studies which assess the contributions of each sector in a BabyWASH design will help us explain why it is more effective than a vertical, siloed approach. It is advised this sort of research is supported by external academic partners with capacity to support results in peer reviewed publications. External academic partners should be carefully vetted for common strategic objectives, core competencies, and thought leadership opportunities. Designated budget for these academic partners must be considered from the beginning and included in M&E budgets. As contexts are very different, suggesting specific research questions is not appropriate here. Below is some generic guidance:

Topic	Considerations	Estimated Resources
Does a combined BabyWASH approach have a larger effect on child growth and development (health, ECD, nutrition) than health/ nutrition programming alone?	Co area* Longitudinal study 3-5 years	High

Is there a cost saving to planning programming together compared to just co-locating programmes?	Co area* 1+ years	Moderate-High
Do mortality and morbidity rates change more in a combined programme than in individual sector, vertical programme?	Co area* Modelling mortality/ morbidity rates (LiST) 3-5 years	Med-High
What are effective delivery BabyWASH packages (ie: a package could include capacity building, advocacy, products, and infrastructure)?	Formative Research Opp 1-2 years	Low
What are effective BabyWASH platforms or combinations (ie: CHWs, Hygiene promotors, SBAs) to deliver BabyWASH interventions?	Formative Research Opp 2-3+years	Low-Med
What might be the unexpected outcomes (good and bad) of integration interventions?	Focus groups Qualitative 1-2+ years	Low-Med
What type of cross sectoral leadership or governance structures is required to enable integration to occur? (this could look at district and national ministries engagement or other partners)	Focus groups Qualitative 1-2+ years	Low-Med

*Comparison areas should be selected based on a set of criteria that help determine how similar or not the comparison is to the intervention area. It will be rare for a comparison area to be entirely free of programming. If possible, logistical feasibility should also be considered when selecting comparison areas. If the area is in a remote area that is difficult to gather data on, it may not be a viable option.

Studies which can be programmed into existing sectoral technical programmes (TPs) are advised. Considering the 5 key life stages and critical intervention points in the BW interventions (from pregnancy to early childhood) research questions can be programed into existing sectoral technical project models for example by adding in a WASH package with research. Or as in figure 7 below to demonstrate how the project model TTC strengthening for BabyWASH may have contributed to improved outcomes.

Figure 6: TTC suitability for inclusion in BW research

In the Health and Nutrition sector is the Timed and Targeted Counselling model (TTC) being implemented in your NO? It may be suitable for inclusion in a BW concept and study because:

- **it targets the same group (1000 days);**
- **has the visits designed around those 5 key life stages;**
- **is a BCC approach that already has WASH elements/interventions, and can additionally include/intensify WASH messages;**
- **has M&E systems for key data collection - registers for pregnant women and CU2, and also direct observations for spaces and practices**
- **the platform can enable access to key BW goods/products and promote their application and**
- **The CHW platform could be a mechanism for distribution and include micro-franchising - for a small profit**

Tool 8: BabyWASH Information for External Stakeholders

Key Purposes:

1. To provide information to use to advocate for BabyWASH with peer organisations, donors, governments and other potential partners
2. To support external engagement opportunities which will raise your organisation's profile as a thought leader in MNCH, Nutrition, WASH and ECD integration expertise
3. To explain the BabyWASH Coalition
4. To answer commonly asked questions from implementers

What is BabyWASH?

BabyWASH is a multi-sectoral approach focused on the health and nutrition of mothers and children in the first 1000 days. It brings together elements of water sanitation and hygiene (WASH), maternal newborn and child health (MNCH), early childhood development (ECD) and nutrition programmes to reduce stunting and improve the health and well-being of children and their caretakers through the reduction of Sepsis and Environmental Enteric Dysfunction. It is based on emerging evidence of the interdependency of these four sectors for sustainable impact on the well-being of children.

Why is BabyWASH a Focus?

BabyWASH seeks to reach children during one of their most vulnerable life stages -- conception to age two. We have chosen to priortise BabyWASH because we believe it will help us have a stronger impact on young children's growth and development, and better align to the Sustainable Development Goals.

What is the Evidence?

There is much emerging evidence of the links between WASH and nutrition, especially regarding the links between diarrhoea and stunting. However, evidence of links between WASH, ECD and MNCH is less developed, especially for children under 2. It is clear, however, that a cleaner environment will prevent infection during birth and reduce disease rates for babies that crawl and explore their surroundings with hand-to-mouth activities. We need to advocate for more research, but that should not keep us from implementing common sense measures alongside those with a strong evidence base.

Will Integration Dilute my Targets and Stretch Programmes Thin?

Not everything needs to be integrated at the beginning. We are striving for optimization of integration focusing on five key hotspots: pregnancy, labour and delivery, newborn period, introduction of complementary feeding, and onset of mobility and exploratory play.

Why are Some Sectors Not Included?

The goal of BabyWASH is to begin the conversation of integration around four core areas where there is the most emerging evidence or strong common sense inferences to justify action. Lessons we learn now will hopefully translate to other sectors and other age ranges to result in increased integration in other sectors. As programmes plan implementation, if there are obvious connections to resilience and livelihoods, food security, etc., they are encouraged to include these things.

What is the BabyWASH Coalition?

Since December 2015, a core group of organisations interested in BabyWASH has come together to form the BabyWASH Coalition, whose goal is to advocate with policy makers and governments for a larger focus on multi-sectoral actions. World Vision has been co-leading with WaterAid and has served as the coordinator for the Coalition. The Coalition is responsible for creating metrics that we can use in our own programming to measure integration. For more information on the BabyWASH Coalition, visit the website at babywashcoalition.org or e-mail the coordinator (admin@babyWASHCoalition.org).

Section 4: Appendices

APPENDIX 1: Glossary

The glossary provides clarity to some of the terms used in the interventions, evidence base, and monitoring and evaluation components of this toolkit.

Clean and protected play/exploration space

Clean and protected play/exploration spaces are sanitary, safe and flat surfaces where babies can move freely and are separated from areas with exposure to faeces (animal and human, including those of babies and young children), household refuse, and livestock contamination. This definition is based off expert opinion on the benefits of clean and protected play spaces, as found in Ngure et al."WASH and ECD: making the links."

Clean birth practices

Clean birth practices refer to the "6 Cleans" promoted by the WHO, outlined as:

1. Clean hands of the attendant and mother,
2. Clean perineum (region from anus to vulva),
3. Clean delivery surface under the mother,
4. Clean blade for cord cutting
5. Clean cord tying
6. Clean towels to dry then wrap the baby and mother

Clean cord care

Clean cord care is recommended by the WHO as "clean and dry." Additional suggestions include the use of chlorhexidine at a concentration of 7.1% during delivery and 4% after birth, continuing for 7 days.

Clean postnatal practices

Clean postnatal practices are consistent with clean birth practices, aiming to reduce infection for mother and child:

1. Hand-washing with soap by the entire household, including children, at key times including
2. Clean cord care (see above)
3. Personal hygiene for mother and child, including clean perineum, and clean disposal of faeces

Community mobilization

Community mobilization is defined by the WHO as a capacity building process through which a community plans, carries out and evaluates activities to improve their health and other needs. In the World Vision context, this includes information, education and social and behaviour change communication to achieve improved health

Hand-washing at key times

Hand-washing with soap by the entire household, **including children**, at key times. Key times include:

1. After defecation
2. After cleaning child's faeces
3. Before preparing food
4. Before feeding a child
5. Before eating
6. After handling livestock

Non-shared sanitation facility

Non-shared for households is defined as a sanitation facility used only by the household. In the healthcare facility, this may mean the sanitation facility is specific to the delivery room, and specific to the postnatal ward, and are not shared by anyone other than the maternity patients.

Safely Managed Sanitation Services

Safely Managed Sanitation Services is a basic sanitation facility which is not shared with other households and where excreta are safely disposed in situ or treated off-site

Safely Managed Drinking Water Services

Safely managed water source is a basic drinking water source which is located on premises, available when needed and free of faecal and priority chemical contamination, as defined by the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.

WASH-safe Birth

A WASH-safe birth is a delivery where these water, sanitation and hygiene standards have all been met:

1. Water is adequate in quantity and quality, and is stored safely on premises (in the home or delivery room). "Safe" storage can be defined as continually running water from a tap, or a clean, covered container of adequate quantity (at least 100 litres per delivery).
2. Sanitation facilities are on premises, and are non-shared and improved. An improved sanitation facility is defined as one that ensures hygienic separation of human excreta from human contact. They include flush/pour flush (to piped sewer system, septic tank, pit latrine), ventilated improved pit (VIP) latrine, pit latrine with slab, and composting toilets. Non-shared is defined above.
3. Hygiene practices follow the WHO 6 "Cleans" and there is a hand-washing station located in the maternity ward or close to the birth at home with soap present:

Figure 9 – WASH-safe birth definition (adapted from LSHTM 2006 definition)

	Facility	Delivery Room
Water	Piped from improved water source directly into facility OR Improved water source on premises and enough water stored in facility to meet two days need; AND Handwashing facilities with soap and water present within facility	Piped water from improved source directly to maternity ward OR Enough improved water stored in maternity ward for two days of use; AND Handwashing facilities with soap and water present within delivery room
	AND	AND
Sanitation	Facility has appropriate number of improved toilets; AND Facility has designated locations for menstrual hygiene management; AND Facility is cleaned regularly to reduce spread of infection	Improved toilet with water and soap available for washing located in delivery room for use by women in labour; AND Tools used for delivery are sanitized or single use; AND Delivery room surfaces are cleaned regularly to reduce spread of infection

APPENDIX 2: BabyWASH in Emergency Response

While this toolkit has not largely explored the emergency context, it is essential to consider. This appendix examines the special considerations for BabyWASH integration in emergency responses and considers the existing guidelines for reference.

Key Purpose:

1. To guide country offices and staff in considering BabyWASH when responding in an emergency

Aligning current emergency response guidance to BabyWASH:

Refer to guiding documents, such as the SPHERE standards for WASH, for guidance on standards for health, nutrition and WASH emergency response.

None of the above documents have been reviewed with respect to BabyWASH specific messaging. However the following issues should be considered:

1. Engage in coordination with the WASH and health cluster to ensure that BabyWASH standards are met and tracked and work with cluster partners for a unified response
2. Make it intentional for WASH and health to be done as a whole package in designing response
3. Clean Delivery Kit to be distributed to all visibly pregnant women in all humanitarian situations and education to ensure they take the kit to the clinic for delivery to help ensure the 6 Cleans
4. Hygiene kits distributed with training, providing household and personal cleaning products suitable for mother and infant, especially in relation to disposal of diapers or infants faeces. (consider distribution of potties for infants)
5. Latrine construction in community and women's spaces take into consideration use by toddlers
6. Disposal of diapers to be considered in WASH interventions (especially if disposables are used)
7. Promote and supply Chlorhexidine for cord care for prevention of newborn sepsis for all births happening in a IDP or unsanitary situation
8. In line with the IFE operational guidance[28], ensure that IYCF feeding is protected and supported in all humanitarian situations. Where artificial feeding is required, actions are required to minimize risks, such as provision of WASH for preparation of infant formula (where RUIF is not available) and sterilizing feeding equipment.
9. Provision of nutritionally appropriate complementary food for young children, and provision of training on hygienic food preparation and storage
10. Child friendly spaces and play activities (for children under 2), with water provision used to keep toys clean and hygienic mats or other alternatives used to keep children from ingesting ground contaminants
11. Basic standards for construction repair of health centres and provision in temporary centres need to include BabyWASH for delivery rooms
12. Access to hand-washing stations to use during food preparation, after using latrine, and when handling a newborn

[28] http://www.ennonline.net/operationalguidanceiycfv2.1

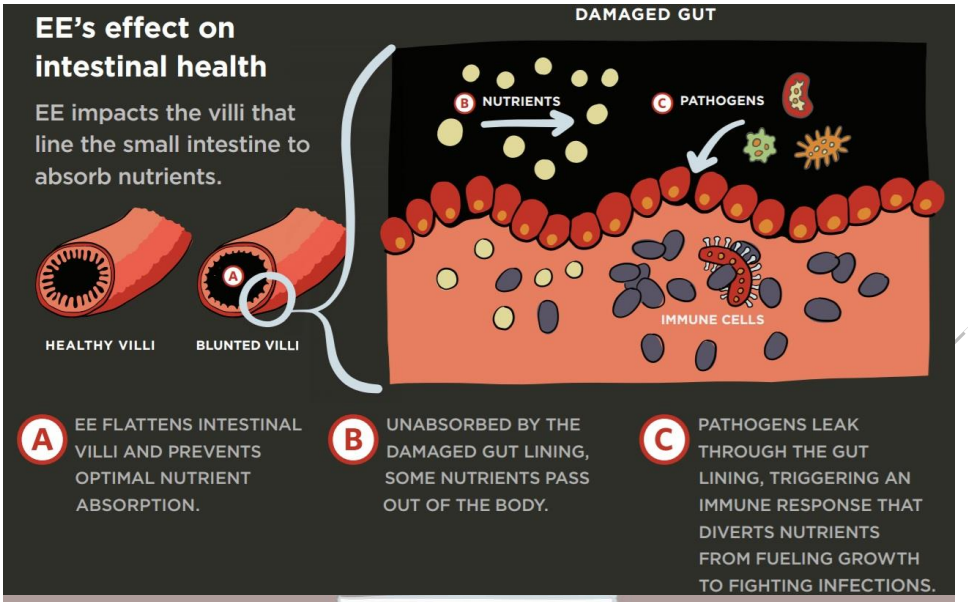
APPENDIX 3: Relevant Resources

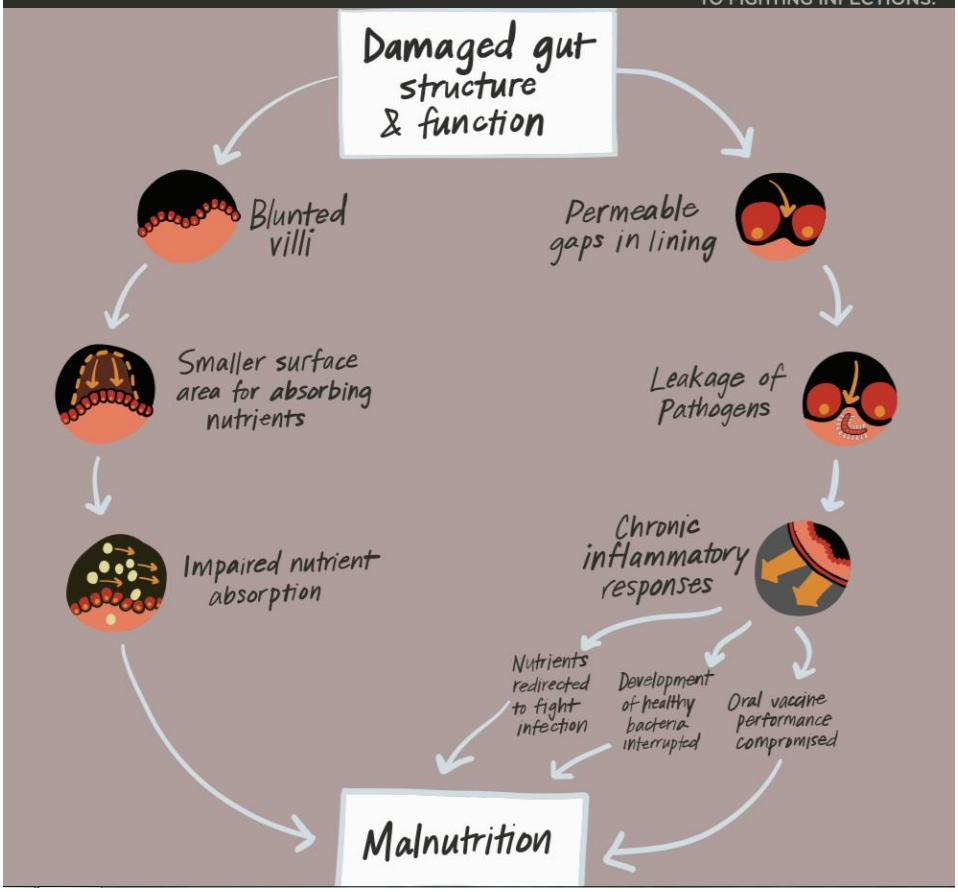
This section provides a more detailed list of important resources that may be of interest for a greater understanding of the community of support for BabyWASH. It includes journal articles, current research, listservs, publications, organisations and movements that are relevant to BabyWASH and support the overall mission of this initiative.

Title	Source	Brief Description	Focus
WASH&Nutrition from the WASHplus project	http://blogs.washplus.org/washnutrition/	This blog/listserv highlights current evidence supporting WASH/ nutrition linkages and programming integration.	WASH, nutrition, integration
Clean, Fed and Nurtured Community of Practice	https://cleanfednurtured.org/	The Clean, Fed & Nurtured community of practice brings together practitioners and researchers in WASH, nutrition and ECD to discuss and plan ways to share knowledge and proven approaches, and test and improve integration of programming in these areas to promote optimal growth and development for children 0 to 3 years of age.	WASH, Nutrition and ECD Integration
Integrated Development Knowledge hub from FHI 360	https://www.fhi360.org/integrated-development	FHI 360 has created multiple tools to help programme implementers understand what research has been done on integrated programming and also what programmes may be the easiest to integrate. Check out the select resources area for some key documents.	Integration of any programmes
Essential Hygiene Action Curricula	http://www.fsnnetwork.org/essential-hygiene-actions-%E2%80%93-care-group-curricula-urban-settings	The care group module was designed for groups of 10-12 women and teaches hygiene and sanitation practices to prevent undernutrition in mothers and their infants. The hygiene actions are currently being updated by WASHPlus which will provide a great opportunity for addressing BabyWASH needs.	WASH and nutrition
Improving Nutrition Outcomes with better Water, Sanitation and Hygiene: Practical Solutions For Policies and Programmes	http://apps.who.int/iris/bitstream/10665/193991/1/9789241565103_eng.pdf?ua=1	This report by WHO, UNICEF and USAID summarizes the current evidence on the benefits of WASH for improving nutrition outcomes and describes how WASH interventions can be integrated into nutrition programmes. It provides practical suggestions, targeted at nutrition programme managers and implementers, on both "what" WASH interventions should be included in nutrition programmes and "how" to include them.	WASH and Nutrition integration
Later Impacts of Childhood Interventions: A Systematic Review	http://ieg.worldbankgroup.org/evaluations/later-impacts-early-childhood-interventions	This report by the World Bank looks at the sustained impact on health through ECD interventions. The report specifically calls out the need for nutrition and therefore the need for WASH, but likely continuing past the first 1,000 days.	ECD integration with other sectors
WASH and Clean Toolkit	http://soapboxcollaborative.org/?page_id=3232	The WASH & CLEAN Toolkit is a free set of tools developed as part of a SHARE Research Consortium and Water Supply and Sanitation Collaborative Council funded study. The tools are to be used to perform a situation analysis of the state of hygiene (outcomes) on the maternity unit, as measured by visual cleanliness and the presence of potential pathogens, and individual and contextual/systems level determinants. The tools can be used as part of an internal audit process, as part of a continuous improvement cycle, or as part of a wider research study.	WASH and MNCH for Healthcare facilities
WASH in HCF Website	http://www.washinhcf.org/home/	As WHO and UNICEF focus more on WASH in healthcare facilities', they are updating indicators, tools, and case studies. All the newest information is posted on this website which is updated regularly including the WASH Fit tool that World Vision plans to use in Mali	WASH in Healthcare facilities
Chlorhexidine for umbilical cord care	http://www.healthynewbornnetwork.org/resource/chlorhexidine-technical-brief-umbilical-cord-cleansing-saves-newborn-lives/	The global CHX working group led by WHO and managed by PATH is made up of academics and researchers, manufactures, donors and NGOs and collaborating to promote and evaluate country uptake of this intervention. This site will provide technical briefs based on the latest evidence plus information of M&E and a list of countries are currently implementing CHX for umbilical cord care	MNCH in healthcare facilities and at home births

APPENDIX 4: EED Infographic

Defeat DD has created a great infographic to describe Environmental Enteric Dysfunction. You can see the whole thing at: http://www.defeatdd.org/sites/default/files/node-images/PATH_6-20-16-Final.pdf





APPENDIX 5: Sepsis Infographic

***Placeholder – there is no good sepsis infographic that we can find that will explain maternal and neonatal sepsis to non-experts. We will update this section when we find something….**

APPENDIX 6: Assessment Tool Considerations

Core questions to measure the BabyWASH indicators can be integrated into the following tools you may already be using to monitor your standard programming:

1. Household survey
2. Community survey
3. Health facility survey

In the case of health facilities, a full tool is also available (see below) or you can use the recommended questions that go with each indicator to integrate into a tool you may already be using. The benefits of the health facility assessment tools are listed below.

Health Facility Assessments

To measure WASH conditions to prevent sepsis, an assessment of the health facility is important. WASH in Health Facilities is emerging as a global priority, and at this time there are two tools available. The WASH Conditions tool (WASH Con) is a comprehensive overview created by Emory University and tested by World Vision. The survey has a specific BabyWASH section that gathers information for the indicators in tool 6, and gives the health facility a score on WASH conditions, infrastructure and resources. Alternatively, the WASH FIT tool, created by WHO, can be used as a way to help prioritize action that health professionals can take in the short term to improve conditions at the facility. The two tools are compared to the right.

Comparison of WASHCon (Emory) and WASH FIT (WHO) Tools

Tool Capabilities	WASHCon	WASH FIT
Facility Type	✓ All	~ Primary Care[1]
Facility Conditions Assessment	✓	✓
Management Assessment	~ Under Development	✓
Behavior Assessment	~ Under Development[2]	~ Minor Focus
BabyWASH Assessment	✓ [3]	X
Implementation Guide	✓	✓
Facility Scorecard	✓	✓
Risk-Based Planning Approach	X	✓
Guided Facility Improvement	X	✓
Individual Facility Reports	✓	✓
Multi-Facility Data Comparison	✓	X
JMP Indicator Comparison	✓	X
Mobile Data Collection	✓	X
Data Visualization	✓	X

Household / Community Environmental Hygiene Survey

To ensure that children are protected from unhygienic environments, checklists must be performed at the household and community level to determine safety level for children. Many WASH programmes have environmental hygiene checklists that they already use, but there is no standard tool. During the implementation workshop that is part of tool 5, be sure to determine if there is a tool already in use by one of the sectors that could be contextualized to more fully reflect the BabyWASH indicators in tool 6, or if a new tool may need to be implemented altogether.

APPENDIX 7: Evidence Summary Table

This table presents an evaluation of the evidence that was used to select the BabyWASH priority interventions, identified per hotspot period. The evaluation criteria are meant to organise the evidence by strength and represent a general, not exhaustive, evaluation system. The evaluation criteria are as follows:

Strong: systematic review/ meta analysis OR consistent results across studies with varied locations/populations which are:
1. randomized 2. large-scale 3. contain a control group

Moderate: Missing 1 criteria from above.

Observational/ Expert opinion: Missing 2+ criteria above, recommendations based on observational studies or expert opinion

Emerging: indicates studies covering EED. May not necessarily reflect poor quality evidence, but rather the emerging nature of the topic results in few studies to compare results or reflects an ongoing study

BabyWASH Evidence Evaluation					
	Pregnancy	**Labour & Delivery**	**Newborn Period**	**Onset of Mobility and Exploration**	**Introduction of Complementary Feeding**
Evidence	--Increased access to improved water sources and sanitation is significantly associated with decreased child and maternal mortality[i] --The physical burden of carrying water increases the risk of uterine prolapse, inadequate weight gain and spontaneous abortion[ii] --EED in women of reproductive age may cause inflammation during pregnancy and adverse birth outcomes such as foetal growth restriction and prematurity[iii]	--11% of maternal deaths occur from sepsis during birth[iv] ----Clean birth practices reduce neonatal sepsis death by 15% at home and 27% in facility[v] --Hand-washing (a component of clean birth practices) by birth attendants and mothers decrease risk of neonatal death by more than 40%[vi], tetanus by more than 36%[vii] [viii], and cord infection by 49%[ix] (home or facility not specified) -Women who give birth in unsanitary conditions are at a threefold increased risk of maternal mortality, in both home and facility births[x]. --Women who bathe before delivery are almost three times less likely to develop sepsis[xi]	--40% of deaths for children under 5 occur in the neonatal period[xii]. 15% of all neonatal deaths are due to sepsis[xiii]. --44% reduced risk of neonatal death (all-cause mortality) from early initiation of breastfeeding. Similar reductions for infection-related neonatal deaths. For sepsis-related deaths, there is a 58% reduced risk of neonatal death with early initiation of breastfeeding.[xiv] --Sepsis related deaths specifically account for 7% of newborn mortality. Sepsis has been shown to be reduced by 40% with clean postnatal practices (WHO 6 Cleans)[v] --Access to sufficient water[A] is necessary to prevent infection in both mother and child[xi]. -Application of chlorhexidine post-natally as a means of cord care has been shown to reduce neonatal mortality and cord infection[v]	--200 million children each year do not reach their developmental potential due to stunting.[xv] --EED is strongly associated with stunting.[xvi] --Around half of diarrhoea episodes and a third of respiratory infections can be prevented by breastfeeding.[xvii] --Children in "clean" households have reduced parasitic infections, less severe EED and greater linear growth[xviii] --Proper disposal of faeces can reduce diarrhoeal disease by more than 30%.[xix] --Evidence suggests that EED is the likely underlying cause of stunting and accounts for residual stunting unaffected by diet and disease control interventions[xx] --EED may reduce oral vaccine efficacy[xxi] [xxii] --Children participating in active exploratory play consume high quantities of E. coli via soil and chicken faeces[xxiii] [xxiv] --The Lancet series on Child Development highlight the importance of improved ECD interventions such as stimulating learning and exploratory play, and improved child-caregiver relationships.[xxv] [xxvi]	

	Pregnancy	Labour & Delivery	Newborn Period	Onset of Mobility and Exploration	Introduction of Complementary Feeding
Possible Interventions:	--Hand-washing by all household including children with soap/other agent at key times including food preparation, before handling food, before feeding, after using sanitation facilities, handling faeces, and livestock.[xxvii] --Access to improved water source[i] --Access to improved sanitation[i]	--Clean birth practices (WHO's 6 Cleans)v [xi] --Access to and use of sanitation facility[x] --Access to clean water for mother during, and post-delivery.[xxviii]	--Hand-washing by all household including children with soap/other agent at key times including food preparation, before handling food, before feeding, after using sanitation facilities, handling faeces, and livestock.[xxvii] --Exclusive breastfeeding for 6 months[xiv] --Access to improved water source[ii] --Treated water at POU[xxix] --Clean postnatal care practices[v] --Access to and use of improved sanitation facility by entire household[xx] i	--Hand-washing by all household including children with soap at key times including food preparation, before handling food, before feeding, after using sanitation facilities, handling faeces, and livestock.[xxvii] --Education on the importance of provision of freshly prepared (complementary) foods[xxx xxxi xxxii] --Provision of safe and hygienic age-appropriate toys for stimulation and development[xxv xxvi] --Education on improved caregiver-child interactions and support.[xxxiii] -- Access to and use of sanitation facility by entire household[x] i -- Clean eating area[xx] -- Clean and protected play space[xx]	
Short-term Impact	--Reduced risk of infection/sepsis		--Reduced risk of infection	--Reduced risk of infection, exposure to pathogens and EE, improved cognitive, social, emotional development	
Long-term Impact	--Reduced maternal and neonatal mortality and long-term morbidity			--Reduced stunting, nutritional impairments, immune functioning --Reaching greater developmental potential	

A - "Sufficient water" was not defined in reference to the evidence statement above. However, according to the World Health Organisation, 20 litres of potable water is sufficient per person per day for domestic purposes, drinking, cooking, and personal hygiene. The WHO also suggests that 100 litres of water is needed per intervention in a maternity unit in healthcare facilities, though no more specific information is available. However discussions with the soapbox initiative during this toolkit development stage suggest that this amount can be broken down to different usages ie: multiple hand-washing during labour and after delivery for skilled birth attendant staff, cleaning of instruments, the bed and the room after delivery, drinking water for labouring woman, washing the mother before and after the birth. More operational research is required to determine this standard requirement.

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