



Integrated Home-based Records:

Ensuring Immunization Format and Function



नियमित टीकाकरण रिकॉर्ड

जन्म से 1 वर्ष

Due Date	जन्म से 1 वर्ष तक	जन्म से 15 दिन तक	जन्म से 24 घंटे के अन्दर
Given Date	BCG	OPV - 0	Hep B
Given Date	8/9/16	8/9/16	8/9/16
Due Date	1 1/2 माह	2 1/2 माह	3 1/2 माह
Given Date	OPV - 1	OPV - 2	OPV - 3
Given Date	21/9/16		
Due Date	Penta-1	Penta-2	Penta-3
Given Date	21/9/16		
Due Date	ROTA - 1	ROTA - 2	ROTA - 3
Given Date	21/9/16		
Due Date	(अन्य टीके)		
Given Date	IPV		

संस्थागत प्रसव के लिए

16 - 24 माह

Due Date	DPT Booster-1	OPV Booster	JE - 2	Measles-2 /MR-2
Given Date				
Due Date	5 से 6 वर्ष	10 वर्ष	16 वर्ष	अन्य टीके
Given Date	DPT Booster-2	TT-1	TT-2	
Given Date				

मुझे टीकाकरण से सम्बंधित सामान्य प्रतिकूल प्रभावों के बारे में सूचित कर दिया है तथा मैं अपने बच्चे को टीकाकरण हेतु स्वीकृति देता हूँ।

Most national immunization programs use home-based records (HBRs, e.g. vaccination or maternal-child health cards/booklets) to record immunizations for each individual. These records are normally maintained by caregivers/parents and used by health workers and community health workers (CHWs)/mobilizers. Historically, most HBRs were developed as a record of a child's immunization status, but they have evolved to include information from many other programs and interventions. These HBRs also serve as a communications tool as well as documentation of various services received. A 2013 study of HBR data from 138 countries in 2013 found that HBR types varied across countries, with 32/138 countries [23.1%] having vaccination only cards; 31/138 [22.4%] with vaccination plus growth monitoring records; child health books in 48/138 [34.7%]; and 27/138 [19.5%] countries with a combination of these.¹

There are three main types of paper-based immunization records which are commonly found:²

- Vaccination only cards, which exclusively record immunization information
- Vaccination plus card, which may include growth charts and a limited amount of additional information
- Comprehensive child health books (sometimes also including pregnancy/maternal content), which include more detailed information on other programs in addition to immunization as well as messaging for caregivers

Important Considerations for HBR Redesign and Use

Countries may need to update their HBRs due to new vaccine introductions, changes in growth monitoring charts, and requests from donors and partners. When redesigning an HBR, it is important for all programs with content in the card to consider these issues from the start of the process:

1. The HBR's intended purpose(s) and end users (see Annex 1) – which affects their format and design;
2. Current availability and use of the HBR (e.g. conduct a situational analysis);³
3. HBR cost and who will pay for printing and plans for sustainability beyond the current funding cycle;
4. Distribution and availability of the HBR at all service sites, with stock management to ensure no stock-outs;⁴
5. Use of the HBR at facilities and during sessions (including by what date(s) the updated information is needed to not interrupt tracking/reporting while the HBR is being redesigned).



Note on Electronic HBRs:

Electronic personal health records are also becoming increasingly used in health services; however, the electronic accessibility may be limited to health workers and may not be archived for later years for parents to access. As a result, the records may not be able to be downloaded by caregivers for use during each vaccination session nor for a longer-term, historical record of their child's vaccination history. In addition, electronic records available at one facility, district, or region may not be available if the family travels or if a child visits another facility for services. Also, as electronic systems and technology develop and change over time, electronic data that are stored today in files/USB drives/servers/the cloud may no longer be available to health workers, caregivers or patients several years from now, when they need to physically present the information for school entry, travel, or as a health record for other services. It is therefore important to have hard copy HBRs in addition to electronic records.

¹ Young et al, *Results from a survey of national immunization programmes on home-based vaccination record practices in 2013*. Int Health 2015 doi: 10.1093/inthealth/ihv014.

² WHO Practical Guide for the Design, Use and Promotion of Home-Based Records in Immunization Programs, WHO 2015.

³ Conducting a Situational Analysis and Engaging Stakeholders on Home-based Record Availability and Use. <https://www.jsi.com/JSIInternet/Resources/publication/display.cfm?txtGeoArea=INTL&id=19315&thisSection=Resources>, JSI, 2018.

⁴ Stock Management for HBR: Ensuring Timely Availability for Every Person/Child, JSI, 2017.

Artifact (HBR/Card) Format and Design

Two primary and intertwined considerations for HBR design include:

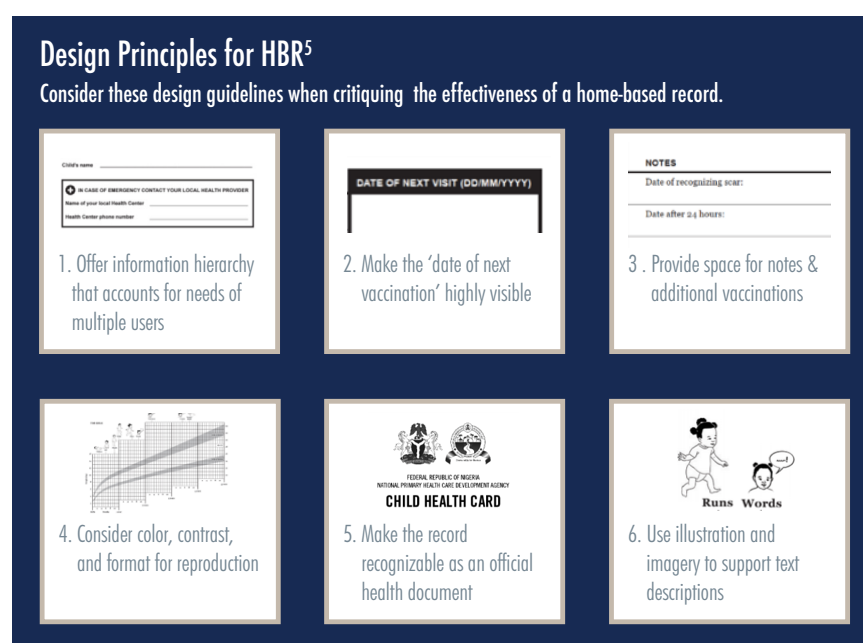
1. Applying good design principles and communication for the content of an HBR (whether the HBR content is exclusively a vaccination record or if it is a record for vaccinations and other health interventions or actions); and
2. How each of the primary users will interact with the HBR (see also Annex 1).

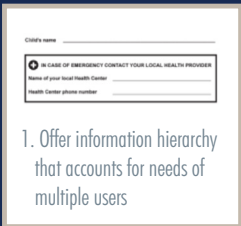

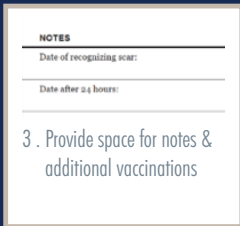
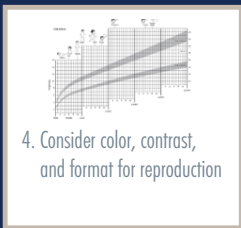
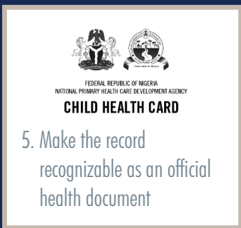
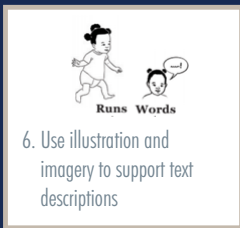
1. Immunization Section in an Integrated HBR with Multiple Services:

Design, Format and Recording in HBR

When the HBR content/material includes multiple services (and particularly if it also has reminders and health education messages for various services), it becomes very difficult to keep the print, writing space, and illustrations large enough

Design Principles for HBR⁵
Consider these design guidelines when critiquing the effectiveness of a home-based record.



1. Offer information hierarchy that accounts for needs of multiple users. 
2. Make the 'date of next vaccination' highly visible. 
3. Provide space for notes & additional vaccinations. 
4. Consider color, contrast, and format for reproduction. 
5. Make the record recognizable as an official health document. 
6. Use illustration and imagery to support text descriptions. 

and the content simple enough for caregivers (and frontline health workers) to understand and legibly fill in and complete the HBR. More content, colors and pages also result in higher printing costs, which can be a challenge for ensuring sustained funding every year. Simple records (e.g. front and back of one large bi-fold or trifold page) in various countries (including Mozambique, India and Zimbabwe) have had this problem. A viable, although more expensive, alternative in these circumstances is a Child Health, or Maternal and Child Health or similarly integrated booklet instead of a one-sheet record.

If the immunization section in the HBR is limited (e.g. to one table or page), it is important to consider and adapt good design principles to make the card user-friendly (for comprehension and sufficient space for recording of each vaccine received and reminder dates). The graphic below and the WHO Practical Guide for HBR² provide guidance on this. Although the immunization section should be developed with a designer in-country, the table in Annex 2 provides an example of a concise format as a possible reference for adaptation.

Use of HBR as a Communication Tool

Planning and designing a multi-intervention record is complicated and takes a long time, since many programs, departments within the MOH, and experts from diverse backgrounds should be involved.⁶ The technical advisors (particularly if different departments are involved, such as nutrition, child health, etc.) tend to want to include more

⁵ Home-based record revitalization workshop in Africa: report summary. 2017.

⁶ Brown et al: Home-based child vaccination records – a reflection on form. Vaccine 2014;32(16):1775-7.

⁷ Home-based Record Redesigns that Worked: Lessons from Madagascar & Ethiopia. JSI, 2017.



In Madagascar, the HBR was enlarged as a training and inter-personal communication tool for use by mobilizers in their interactions with caregivers, as shown in this picture.

information on their technical area than there is room for in the HBR, and the communicators normally want to limit the non-essential technical content and include messages for the users. There needs to be a reasonable compromise. There also needs to be a focused effort to keep all sections at a clear and consistent communication level, as evidenced in the experiences from Madagascar and Ethiopia.⁷ On the one hand, a take-home material provides an excellent opportunity to communicate key information to the great majority of caregivers in a country. On the other, if there is too much information or the messages/content/visuals are not clear or legible (or not sufficiently emphasized by health workers), the content in the HBR will be confusing to the users. The HBR can also contain health

messages for caregivers, which requires (a) some training and monitoring of the health worker/CHW to provide inter-personal communication as well as (b) some orientation for the caregivers to familiarize them with the information in the card and any actions they should follow. It is also important for health workers and CHWs to continually emphasize and remind caregivers about the importance of keeping the card throughout the vaccination series as well as after completion of vaccination, e.g. as a record for fully immunized infants, if needed for school entry, surveys, etc.

Printing and Funding

The cost of the printing and dissemination of a multi-content HBR booklet is often not annualized or guaranteed in MOH budgets. The HBR costs are also sometimes combined with the budget line item for several other reporting tools/materials, and therefore the HBR quantities needed are not specified or may be overlooked when budget reductions are made or materials are deprioritized. HBR stock management and projections are also not uniformly monitored to help guide estimates.⁴ The cost for printing and dissemination of a multi-content HBR booklet may also be shared or distributed among several departments, resulting in confusion on which department is “responsible” for the HBR. This has been noted in studies and analyses of HBRs.^{1,8} Delays and/or lack of dedicated funding often result in donors financing the HBR for a short-period of time (e.g. for one year of printing only) or only in regions or provinces where they are working. This has been the case in Madagascar, where donors have assisted in funding the separate Child Health Booklet and the Maternal Health Booklet; however the lack of consistent government funding has resulted in stock outs of these booklets in many regions of the country.

The updating of HBRs by various departments (e.g. for addition of new vaccines, new commodities like zinc or vitamin A supplementation, updated growth monitoring charts, etc.) has also caused delays in finalizing printing in many countries, as timelines defer. (For example, HBRs need to be updated and available prior to the launch date of a new vaccine like rotavirus; however delays in printing may be caused by lack of final decisions by other departments, such as when the nutrition unit is changing growth monitoring charts.) In Nepal, the Child Health Card and other facility-based tools are



A mother in Zimbabwe shows her son's HBR. There are different colors for boys (blue) and girls (pink) to correspond with different growth monitoring charts.

⁸ Brown et al: [Occurrence of home-based record stock-outs—A quiet problem for national immunization programmes continues](#). Vaccine 2018;36(6):773-778.; [Home-based records and market shaping opportunities moving forward](#). TechNet21 Forum Discussion

⁹ Hasman et al: [Revitalizing the home-based record: Reflections from an innovative south-south exchange for optimizing the quality, availability and use of home-based records in immunization systems](#). Vaccine 2016;34(47): 5697-5699. doi.org/10.1016/j.vaccine.2016.09.064

printed once a year by the HMIS unit. Any updates to the Child Health Card must be approved by all departments who have content (EPI, nutrition, IMCI, etc.), in advance of the HMIS deadline for printing. In 2016, following a regional HBR revitalization workshop,⁹ a new design for the Child Health Card was developed but was not approved by the deadline, resulting in HBRs being printed with an old design that included an out of date immunization schedule. A Technical Working Group with MOH and partners began meeting to coordinate issues related to printing, distribution, and use of the Child Health Card and to ensure that the updated immunization schedule was included in the next round of printing.

Although it has not been explored for HBRs, there may be opportunities for regional support for procurement or marketing shaping of printing services and/or durable paper to bring down these costs.



The Democratic Republic of Congo has recently introduced a new HBR with detachable “coupon” that is stored at the health facility to aid in defaulter tracking.

2. The Users:

HBR designers must consider how each of the primary users will interact with the HBR (see Annex 1). For example, will the HBR:

- remind and inform caregivers of services provided and when to return,
- facilitate health communication for CHWs,
- inform health workers which vaccines a child has received, and/or
- serve as a record for health administrators?

Each of these user groups must be considered when designing the HBR. It is difficult to design a material that meets the needs of all audiences, so a balance is needed. India, for example, has met this challenge by designing the HBR with a page that is retained by the caregiver and a detachable section that stays at the health facility and is used for tracking.

As caregivers are considered to be a primary audience, then the HBR must be designed for them to understand, and it should be thoroughly pretested with them. Take home records for caregivers should have legible print and graphics and not use complex medical terms.

Function: Availability, Retention and Bringing the HBR to Services

A priority for health services is to ensure that HBRs are available and distributed, preferably at no cost to caregivers (depending on the immunization policy). Programs sometimes unfairly blame caregivers when they cannot produce the record, but the reason may be that caregivers never received one.¹⁰ Generally retention of HBRs is good when caregivers receive instruction to keep the HBR and to bring it for subsequent visits, and when this information is reinforced by CHWs and other communication channels.¹¹ Also, the reminder dates for when the caregiver is to bring the infant back for the next vaccination(s) need to be clearly communicated, preferably written on the HBR and reinforced through other communication. Communication and program efforts emphasizing card use and retention by the MOH and partners in Madagascar from approximately 2000-2009 resulted in card availability of 70-80% in regions in Antananarivo and Fianarantsoa in the 2008 coverage survey.⁶ More recently in Nepal, an HBR situational analysis conducted by the MOH

⁹ Hasman et al: Revitalizing the home-based record: Reflections from an innovative south-south exchange for optimizing the quality, availability and use of home-based records in immunization systems. *Vaccine* 2016;34(47): 5697-5699. doi.org/10.1016/j.vaccine.2016.09.064

¹⁰ Brown et al: Home-based record prevalence among children aged 12-23 months from 180 demographic and health surveys. *Vaccine* 2015;33(22):2584-93. doi: 10.1016/j.vaccine.2015.03.101.

¹¹ Learnings from the Field, JSI, forthcoming. www.jsi.com/homebasedrecordsproject

with JSI, UNICEF and other partners in 2016 showed the following challenges with retention: caregivers were unaware of the importance of the HBR, poor quality paper resulted in HBRs easily being destroyed, and health workers were not requesting to see HBRs during visits nor informing caregivers of their importance. Activities conducted in one district in 2017 to strengthen the use of HBRs included trainings for health workers and CHWs and radio messages for the community. Focus group discussions with each of these key users showed that caregivers had an increased understanding of the need for retention and some were requesting replacement HBRs.

Preserving HBRs

Zimbabwe distributes HBRs with plastic re-sealable bags in order to promote retention and protect cards from being torn or destroyed. Nepal has considered upgrading the quality of paper used for their HBR but found this to be difficult, as printing was outsourced to another unit. As an alternative, plastic covers are being tested in one district in Nepal to protect cards in the home and when caregivers are carrying them to the facility. Other countries (including Benin, Kenya and Madagascar) use a thicker, glossier paper for the HBR cover, with thinner, less expensive paper for the interior pages of the booklet.

One would expect that retention might be better where more caregivers are literate and the card is well designed for their understanding. However, more evidence is needed to understand the dynamics of literacy (both of health workers and caregivers) and communication/interactions during health services to discern their combined influence on HBR retention. A 2011 study in Nepal looked at factors affecting retention of child health cards in a rural area.¹² It cites: “Younger age group of the child, mothers living nearer to health facility, mothers with knowledge on use of child health card for recording immunization and recording growth monitoring; and mothers who were explained child health card by health worker were found to have significantly higher odds of retaining it [card].” A 2005 study from a Uganda slum area in Kampala¹³ notes, “Children delivered at a health facility were 4 times more likely to have a card compared to those delivered at home. Children whose mothers had a health problem during pregnancy were 2.5 times more likely to have a card, and children taken to a health facility in the 3 months preceding the survey were twice as likely to have a card. Children who had cards were 10 times more likely to be up to date with the immunization schedule.”

The physical quality and durability of the HBR (e.g. paper product used) may affect cost and may also affect retention. In many countries, HBRs kept at the home can be accidentally torn by children, or the HBRs become damaged by fire, water or rodents. To combat this, some countries print HBRs with a thicker paper or plastic-type coating that enables writing on the surface. Other countries have added a plastic slip cover to store the HBR (or have included a file folder or multi-pouch envelope in which the family can keep the HBR and a few other important documents). However, these methods come at an added cost, which Ministries of Health may not be able to afford. An in-country cost-benefit analysis of these features (including field testing to assure a user-friendly HBR) would be an important addition to advocate for government funds to cover the expenses on a routine basis.

Health programs could also conduct rapid formative research to learn where caregivers preserve/store the HBRs as well as how and why they value the records. These findings can then be used in redesigning the HBR and in communications to motivate people to store it securely and to remember to bring the HBR to services. This could include analysis of whether integrated cards that include both preventive information and space for



Nepal is testing the use of plastic covers to increase retention of HBRs.

¹² Pahari et al: *Factors affecting retention of child health card in a rural area*. J Nepal Health Res Counc. 2011 Oct;9(2):154-8.

¹³ Mukanga et al: *Factors affecting the retention and use of child health cards in a slum community in Kampala, Uganda, 2005*. Matern Child Health J. 2006 Nov;10(6):545-52.

curative consultations are more likely to be retained than cards that only have preventive information. Vaccinators and child health and nutrition programs and service providers should routinely remind caregivers of any young children, and particularly infants, to bring the HBR whenever they are coming to services (whether preventive or curative).

A related issue is what health workers do when caregivers are present at services but did not bring the HBR. Does the health worker vaccinate the child and record the vaccination in the facility register as well as on a slip of paper or in an exercise book that they then ask the caregiver to bring, along with the record, for the next session? Or does the health worker refuse to vaccinate until the caregiver has returned with the HBR? If caregivers forget the HBR (or do not understand or are not reminded to bring it for each vaccination and health service), they may be reprimanded by the health worker. Whether such a public embarrassment is “educational” (as the health worker may believe) or discourages further vaccinations probably depends both on the culture and the individuals involved.

Although HBRs and vaccinations are free in most government programs, some programs do charge for records. In several countries (e.g. DRC, Cameroon, Kenya, Uganda, Zimbabwe), when there have been stock-outs of HBRs, health workers ask caretakers to purchase exercise books as “temporary” cards. This can result in quality assurance concerns, as these unofficial documents may be kept and not replaced or updated when the official HBRs are available. In Benin, HBRs are purchased by caregivers, with the payment being used by the district to print HBRs for future children.

It would be informative for MOHs and partners to examine the findings from studies and practices on the impact of charging for HBRs both on coverage and retention levels, the value placed by caretakers on less formal records, as well as the impact this may have later when official vaccination records may be required for school entry.

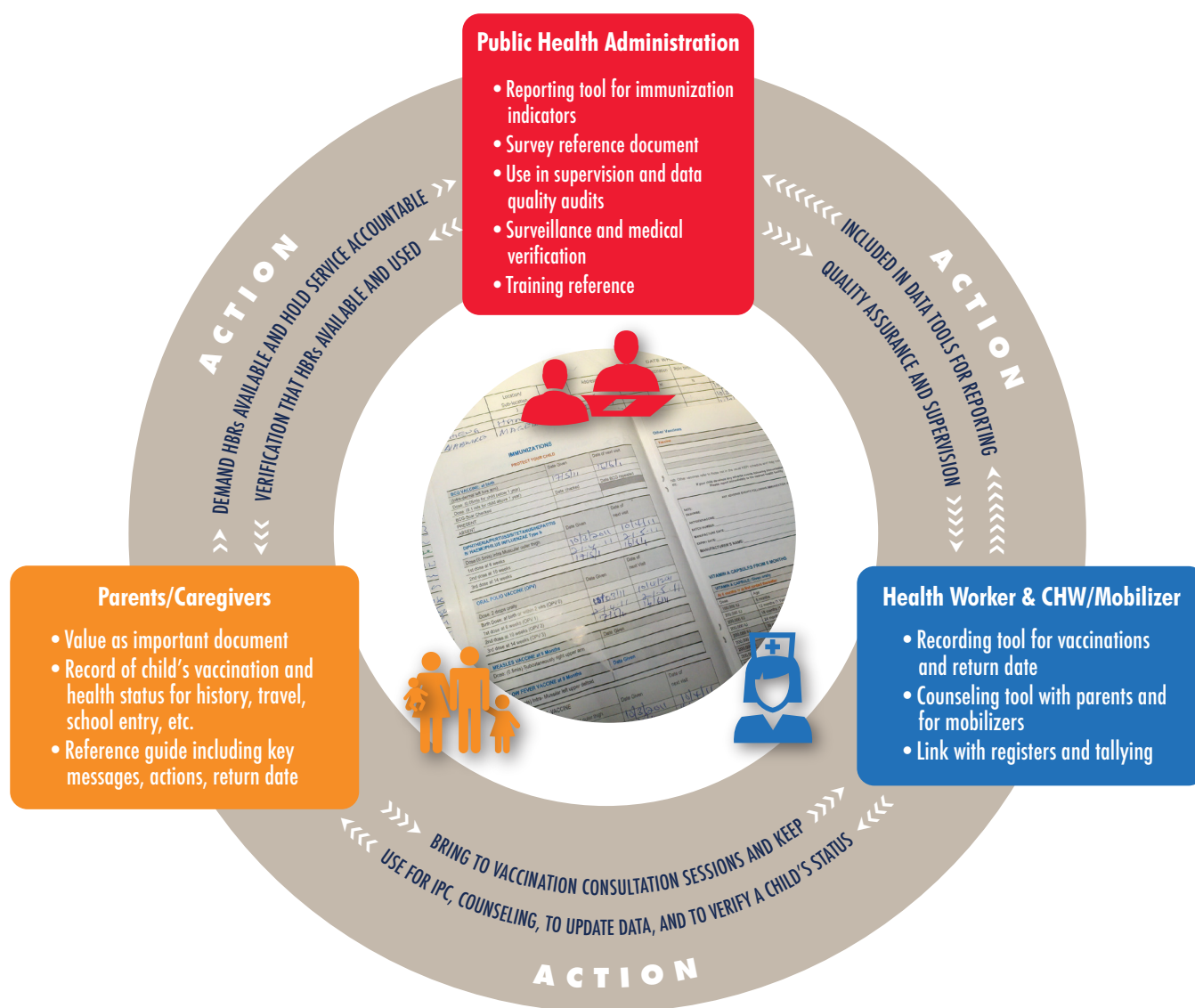
Note on Adolescent and Women’s Vaccination Records and HBRs

This synopsis of experiences has focused on the issues and challenges related to children’s HBRs. A similar and potentially more complicated challenge is creating a functional HBR for older age groups, such as adolescents or for women through pregnancies (e.g. to document HPV vaccination and/or for tracking tetanus toxoid (TT) over the lifetime of a woman of child-bearing age). Considerations include: (1) securing financing for production, dissemination and use of life course HBRs, with program involvement of various departments/health units along the continuum of care; (2) maintaining the record for many years (e.g. 20 years or more for TT); and (3) assuring regular service delivery contacts with these target groups to reinforce the use of these HBRs. For example, although many countries follow a five lifetime TT dose schedule, in reality they give TT almost exclusively in antenatal (ANC) visits and campaigns. The Maternal and Neonatal health programs need to be actively engaged in assuring that the HBR is available, monitored and used to more accurately determine and validate which doses of TT a woman has received.




Many of the same issues noted previously for HBR retention, use and durability also apply for these adolescent and women’s vaccination records. Take-home ANC records or mother/child booklets (that include content for each pregnancy and/or for HPV vaccination and other adolescent health services) can be used, with the same considerations that have already been highlighted. This could potentially also be complemented by electronic health systems that assure a downloadable, printable e-record that is accessible from any service location over many years. WHO is developing guidelines for improving the content, availability and use of integrated cards (anticipated to be available in 2019).

For more information, visit: www.jsi.com/homebasedrecordsproject.

Annex 1: Home-based Record Users and Actions



Annex 2: Generic Immunization Table

Age	Antigen	Date Received DD / MM / YY	Return Date DD / MM / YY
Birth	BCG	___ / ___ / ___	___ / ___ / ___
	OPV-0	___ / ___ / ___	
 6 weeks	DTP-HepB-Hib 1	___ / ___ / ___	___ / ___ / ___
	PCV 1	___ / ___ / ___	
	OPV 1	___ / ___ / ___	
	Rota 1	___ / ___ / ___	
10 weeks	DTP-HepB-Hib 2	___ / ___ / ___	___ / ___ / ___
	PCV 2	___ / ___ / ___	
	OPV 2	___ / ___ / ___	
	Rota 2	___ / ___ / ___	
 14 weeks	DTP-HepB-Hib 3	___ / ___ / ___	___ / ___ / ___
	PCV 3	___ / ___ / ___	
	OPV 3	___ / ___ / ___	
	IPV ___ / ___ / ___		
 9 months	Measles-Rubella 1	___ / ___ / ___	___ / ___ / ___
 18 months	Measles-Rubella 2	___ / ___ / ___	



1616 N. Fort Myer Drive, 16th Floor

Rosslyn, VA 22209-3110

Phone: 1.703.528.7474

Fax: 1.703.528.7480

www.jsi.com/homebasedrecordsproject