

**Feasibility of providing hepatitis B birth dose in Myanmar's community setting:  
a qualitative assessment**

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Myanmar, being considered a country with high endemicity of HBV infection with perinatal mode of transmission playing an important role and HB vaccination at the grass root level being implemented in full swing now, the feasibility of expanding HBBD needs to be explored. This study specifically aimed to elicit opinions of health staff and mothers as regards feasibility of expanding HBBD in Myanmar's community setting. A cross-sectional design was used and qualitative methods of data collection employed in four townships. Qualitative data collection methods involved performing 10 Focus Group Discussions (FGDs) with midwives and 15 FGDs with mothers. Our study highlighted that midwives are at the moment overburdened with so many tasks in addition to their primary duties of maternal and child care. In spite of this situation, they expressed their willingness to implement HBBD for home deliveries if they were given necessary support, for example, vehicles for traveling, allowances for transports, single dose vials, proper cold chain system, etc. All the midwives were aware that providing HBBD to all babies was the best practice. All the mothers in both urban and rural areas were willing to let their newly born babies vaccinated for HB. The participants in our study identified all the possible facilitating factors and obstacles for expanding HBBD to deliveries made at homes.

**INTRODUCTION**

Based on small scale studies conducted in Myanmar during 1981-2000 [1-11] hepatitis B surface antigen (HBsAg) prevalence among general population is estimated at 10-12%. This has placed Myanmar in an area of high endemicity. In southern and eastern Asia, up to 50% of chronic hepatitis B virus (HBV) infection results from perinatal transmission from mother to infant, during or soon after birth [12,13]. Although precise data on modes of transmission is not available, it has been indicated that in Myanmar an Asian pattern of infection is very likely to prevail [14].

Hepatitis B birth dose (HBBD) was first introduced in July 2003 in 10 hospitals of Yangon Division and 11 hospitals of Mandalay Division all having beds over

150. The birth dose is defined as that provided within 24 hours of birth. After providing HBBD in hospitals, the second dose and the third dose were also given in some of these hospitals. But in some hospitals, the birth dose immunization registers were sent to respective township health departments. The basic health staff of respective township health departments issued immunization cards to the mothers. The midwife of respective community had to check completion of HB immunization and then provided follow-up second and third dose immunizations.

At the time of this study in 2004, HBBD is being provided free of charge at 27 district level hospitals and 12 tertiary level hospitals all over the country. These hospitals are selected according to the following criteria: having a monthly birth delivery of at least

30; being a district level hospital and above; and existence of cold chain.

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## MATERIALS AND METHODS

A cross-sectional design was used and qualitative methods of data collection employed. Four divisions - Yangon, Bago (West), Ayeyawady and Mandalay - were chosen purposively. One township was chosen randomly in each division among those that met the criteria: existence of a 100 to 200-bedded district hospital at the township headquarter; the hospital delivers HBBD; and the township possesses rural characteristics, i.e., about 70% of the Township population resides in rural areas and there exists 3-5 Rural Health Centers (RHCs).

This gave four townships as study areas: Thanlyin Township in Yangon Division, Pyay Township in Bago (West) Division, Maubin Township in Ayeyawady Division and Bagan NyaungU Township in Mandalay Division. In each township, two Rural Health Center (RHC) areas were chosen randomly for data collection.

Qualitative data collection methods involved performing Focus Group Discussions (FGDs) with mothers and midwives. There was a total of 5 FGDs each with urban midwives and rural midwives who are immunization providers. These FGD sessions took place at the township head quarter. Mothers were chosen among those having a child less than 12 months of age. There were a total of 5 FGDs with

urban mothers and 10 FGDs with rural mothers. These FGD sessions took place at non-threatening places away from health centers.

Qualitative data analysis was performed manually, using matrix prepared according to each theme/sub-theme for each FGD session. Triangulation was made between different groups of interviewees.

## RESULTS

### *Voices of health staff*

According to the interviewees, most of mothers came to midwives for antenatal care in both rural and urban areas except for those pregnant mothers whose villages were far away from the villages where midwives resided or those staying at outskirts of the town. Only very few went to traditional birth attendants (TBAs) or auxiliary midwives (AMWs) for antenatal care. Mothers were said to be quite aware for getting anti-tetanus toxoid (ATT) injections and this was also an important entry point for providing antenatal care and getting the pregnant mothers' list. Local volunteer health workers (AMWs and community health workers), local authorities, local NGO members and TBAs assisted the midwives in getting the information of pregnant mothers. Getting information of pregnant mothers in a village was said to be a very easy task; everybody knew everyone's situation in the villages.

*“When I went for ATT vaccination of mothers, local people reported who were pregnant in their village”*

(a 30-year-old midwife with 4 years experience working in urban area in Bagan NyaungU Township)

Although most mothers came to midwives for antenatal care, all the deliveries might not be delivered by the midwives and most of the deliveries took place at homes. Estimates made by some interviewees as regards percentages of deliveries by midwives at homes varied from 60%-80%.

The remaining 20% - 40% were delivered by AMWs, TBAs, retired midwives or others. These figures could be overestimations for some areas because some midwives admitted that TBAs were still the key birth attendants in rural area as well as in urban area, especially for poor people.

*“Total number of deliveries made by a TBA per month is more than that combined for a midwife and an AMW...TBA stays at a mother’s home for some days helping her in household chores during the puerperium...we are unable to provide this kind of service”*

(a 32-year-old midwife with 9 years experience working in a rural area in one of the study townships)

Generally, deliveries were notified to a midwife either by TBAs, AMWs, the husbands of mothers, or relatives of mothers. This notification was an important necessity for getting a birth certificate from the township health department.

*“We told local people that if they do not inform us their births, we will not give recommendations for birth certificates”*

(a 48-year-old midwife with 23 years experience working in a rural area in Bago Township)

However, birth reports did not take place within 24 hours. It could even be more difficult to get the reporting within 24 hours in rural areas as some villages were quite far away from the villages where midwives resided. It usually took 2-3 days, or even up to one week, particularly for those families staying scattered in huts in the rice fields, to report the births. The situation could be worsened during rainy seasons as travels became more difficult.

All the midwives were aware that providing a birth dose to a baby was the best practice. However, opinions varied as regards operational feasibility to provide HBBD for deliveries made at homes because there would be many problems to make the

programme a success. Most of the urban midwives expressed that providing HBBD might be possible and on the other hand, most of the rural midwives gave negative views that providing HBBD was impossible.

Issues that were raised by the interviewees on either supporting or opposing the idea of providing HBBD for home deliveries were as follows:

- HB vaccine being quite popular among the mothers, they would collaborate with health staff for providing birth dose to their babies.
- Some of the Sub-centers were located not so far away from the RHC or from the township health department from where they might have to fetch vaccines. For such Sub-centers, HBBD programme might be feasible.
- One important issue was to get birth information within 24 hours. This would require collaboration of local authorities and NGO members. In order to get the information of births with TBAs within 24 hours, the first task would be to educate the mothers on the importance of receiving HBBD for their babies. At the moment this information (the importance of receiving HBBD) was not given to pregnant mothers because HBBD was not yet implemented to a wider scale in the community.

The second task would be to organize TBAs. The third task would be to get collaboration of local authorities to give proper instructions to TBAs. The fourth task would be to get collaboration from local NGO members (especially maternal and child welfare association) in the educational programme for mothers.

- The distance of the majority of the Sub-centers from the RHC was very far away and travel mode was very difficult. Rural interviewees in one township said there was only about 10% possibility for making the programme feasible for

those villages located close to the town or close to RHCs with proper cold chain system. They said this kind of selective implementation would create discrimination and would cause dissents among local rural people. The interviewees said that midwives should be provided with bicycles or motor cycles. Even, bicycles were said to be not suitable for carrying vaccine carriers; each midwife would need to hire tricycles and this would involve travel expenses.

- The interviewees said they were worried for transport costs and costs for buying ice.

*“Nobody supported our expenses for transport and for buying ice”*

(a 59-year-old midwife with 33 years experience working in a rural area in Maubin Township)

*“When we go to town to get vaccines and while waiting for a bus the bus drivers do not stop the cars if they see someone with a uniform because they know they will have to give a free lift ... so I have to wear a ‘one set’ dress and only then the bus stops”*

(a 39-year-old midwife with 16 years experience working in a rural area in Pyay Township)

- There is no electricity at their villages for proper cold storage. The interviewees requested to provide them with appropriate cold storage facilities because at the moment 6-dose vials were being used and a midwife would require to keep unused doses for some days. Suggestions were made to provide one dose vials.
- Few midwives suggested to provide a refrigerator and a solar energy system and refrigerators at each Sub-center or at the RHC, and the Public Health Supervisors at each rural health center should be assigned to take care of the facilities.
- The midwives said that it would be impossible to keep the vaccines at their

homes and also might not be feasible for them to go and get the vaccines from the township health department by themselves. If the midwives themselves were to go and fetch the vaccines from the main store, they might encounter difficulties because they had many other works to do. They said the system should allow some other person sent by a midwife on her behalf to take the vaccines. Mothers, after delivering a baby with someone other than the midwife, would have to inform the responsible midwife from the area through one of the family members (husband or elder children or a relative) about the birth. Then the midwife would write a letter to the person on duty at the vaccine storage depot of the township health department. This letter was to be carried by the same family member and get the vaccine. Then the midwife would be able to give a birth dose to the baby.

- The interviewees suggested that there should be someone on duty for 24 hours at the vaccine storage depot of the township health department for distributing HB vaccines everyday.
- Most of the interviewees said they did not mind carrying HB vaccines with them when visiting home to perform deliveries. However, some made a caution by saying they would need cold flasks and ice. There were also interviewees who said that it would not be practically feasible to carry the vaccines with them when they made home visits for deliveries because it would not always be sure whether a birth would take place or not and also because they would need to carry the vaccines with an ice pack. Another reason given was that they did not possess proper vaccine storage systems at their Sub-centers.
- There were insufficient staff to perform the task. Interviewees said that they were already overburdened with the current EPI programme. They indicated the burden of workload that would be posed on

them with the HBBD programme for home deliveries. A midwife, stationed at each Sub-center, was said to be the key implementer of hepatitis B immunization programme for children. Each Sub-center midwife had to take care of 4-5 villages. Sometimes, a midwife was away at town to attend a meeting or a training course or to draw salary and she could miss some births for providing HBBD in time. Thus more manpower would be required at each Sub-center to meet the HBBD requirements of all births in the jurisdiction of each Sub-center.

*“We are all overburdened with our work ... we even have to take help from our family members to help us in our work”*

(a 49-year-old midwife with 20 years experience working in a rural area in Maubin Township)

- Another issue was that the baby being very small at that time, in case something happened to the baby after giving HBBD, people would blame the midwife who gave the injection. This kind of incident in hospitals might be more manageable where there are doctors and specialists.

*“If something happens with the HBBD given at hospitals, there would be no complaints from mothers ... but if such a mishap takes place at home while giving HBBD, then the mothers will create problems to us”*

(a 58-year-old midwife with 37 years experience working in a rural area in Pyay Township)

- Providing birth dose within 72 hours was considered relatively more feasible by some interviewees, particularly from urban areas. Even then, rural midwives said, due considerations needed to be paid to cold chain and logistics and suggested to provide refrigerators at RHCs or if possible at Sub-centers. They did not guarantee a 100% success with this extended time duration.

*“It is 100% possible if we are to provide HBBD within 72 hours”*

(a 31-year-old midwife with 6 years experience working in urban area in Maubin Township)

*“Even to implement HBBD for births within 72 hours, we can guarantee only 10% possibility”*

(a 37-year-old midwife with 14 years experience working in a rural area in Pyay Township)

- Another situation that could pose a problem on provision of birth dose for home deliveries would be the local culture that both the mother and the child stayed confined in the delivery room for a few days after delivery, i.e., the puerperial period. These mothers would accept the birth dose if it could be given at their homes.

*“Mothers do not come out of their delivery rooms during puerperium”*

(a 57-year-old midwife with 30 years experience working in urban area in Bagan NyaungU Township)

#### *Voices from the community*

It was found that majority of the mothers took antenatal care with midwives while going to the midwives for ATT immunizations. Majority of mothers interviewed in both urban and rural areas delivered their last children at homes, with either a health staff or a TBA (especially those who were poor). There were also deliveries made with AMWs in some villages. The births delivered by AMWs and TBAs were reported to midwives some time later to get birth certificates.

*“Those who can afford, deliver with sayama (a midwife), and those who cannot afford, deliver with a let-the (a TBA)”*

(a 36-year-old rural mother of two children, whose last delivery was made with a midwife at home in Thanlyin Township)

All the mothers in both urban and rural areas expressed their willingness to accept HBBD after home deliveries. However, there were differing views as regards taking their newly born babies to an immunization post to get HBBD within 24 hours. For those who gave negative views, the reasons were that they would not like to take a very small baby out of their homes and they wanted to wait for the baby to reach a few days of age to take the baby out of the house; and they would not be able to go out for 7 days as it was the traditional puerperal practice.

For those who expressed positive views, they said that although a mother might not be able to accompany the baby because she was in puerperium, the baby could be carried by their husbands or parents or in-laws or a relative to the immunization post for getting HBBD. Mothers requested that some care should be given so that a baby after receiving a birth dose would not have fever.

*“My husband will carry my baby to the place for immunization”*

(a 24-year-old rural mother of one child, whose last delivery was made with a TBA at home in Bago Township)

*“I will let my husband carry my baby to the place for immunization”*

(a 34-year-old rural mother of one child, whose last delivery was made with a midwife at home in Bagan NyaungU Township)

Rural interviewees from one rural area in Maubin Township made interesting suggestions for implementation of HBBD in their rural area. They said they just needed a letter of recommendation from a health staff saying that there was a birth and that HB vaccine be provided to the person who came to the store in Maubin Town. They would send someone with the letter to Maubin and the transport was said to be very easy as there were motor cycle taxis. They would

carry the vaccine with a cold flask. These rural interviewees said that electricity was available at some villages in Maubin Township and there were refrigerators at some homes. These people possessing refrigerators could help the HBBD programme by keeping the vaccines at their home in their refrigerators.

## DISCUSSION

Most mothers, both in rural and urban areas, took antenatal care with midwives. ATT immunization programme was an entry point for getting contacts with pregnant mothers, making their list and giving antenatal care. Midwives also got assistance from local authorities and NGO members in finding pregnant mothers. Not all deliveries took place with midwives that gave the pregnant mothers the antenatal care. Some of the deliveries were made by TBAs and AMWs. Although the use of TBAs for deliveries was said to have gone down, TBAs were still being used particularly by poor families.

To get information of births at homes (for those delivered by persons other than health staff) within 24 hours was said to be uneasy. Majority of deliveries in both rural and urban areas took place at homes. Two issues - home deliveries and deliveries with untrained persons - are of particular importance for consideration in formulation of strategies for providing HBBD in Myanmar. One important point here to note is that poor people are the ones more entangled in these two issues.

There is one factor, if properly employed, might become an entry point for getting birth information as early as possible. This is the practice of reporting (usually after some days) by all birth attendants to midwives of the births to get birth certificates. This practice made TBAs and other untrained accouchers report births compulsorily. Even then, to report births to a midwife within 24 hours for deliveries made by these untrained accouchers at far

away villages would not be easy, particularly in rural areas.

Our study highlighted that midwives are at the moment overburdened with so many tasks in addition to their primary duties of maternal and child care. In spite of this situation, they expressed their willingness to implement HBBD for home deliveries if they were given necessary support, for example, vehicles for traveling, allowances for transports, single dose vials, proper cold chain system, etc.

All the midwives were aware that providing HBBD to all babies was the best practice. All the mothers in both urban and rural areas were willing to let their newly born babies vaccinated for HB. The participants in our study identified all the possible facilitating factors and obstacles for expanding HBBD to deliveries made at homes.

HB vaccine and tetanus toxoid are relatively heat-stable and it has been shown that there was only a small loss in potency when stored for 2-6 months at 37 degrees Centigrade [15,16,17]. One Indonesian study described a success story of an immunization approach that took advantage of the heat stability of hepatitis B vaccine and tetanus toxoid [18]. In this approach, a pre-filled single use injection device known as Uniject<sup>a</sup> was used together with heat-stable vaccines in an outreach programme conducted beyond the cold chain. Midwives used these devices for providing hepatitis B to new born infants delivered at homes and tetanus toxoid to postpartum mothers. It is recommended to conduct an operational research to look into feasibility of implementing HBBD for home deliveries in Myanmar.

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<sup>a</sup> The Uniject device, developed by Programme for Appropriate Technology in Health (PATH), is a pre-filled, single-dose injection device specifically designed to prevent attempts at reuse. It combines drug or biological, syringe, and needle packaged in a sealed foil pouch.

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