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# Expanded Program on Immunization (EPI) for Children of Myanmar Migrants Living in Bangkok, Thailand

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*Although Thailand has established and maintained an immunization policy for children regardless of ethnic origin, the National Expanded Program on Immunizations (EPI) has not been able to reach many children of migrants, due to a lack of information on both the size and location of this population. This article presents the results of a study of the migrant population that provides recommendations for improving EPI coverage. Quantitative and qualitative data were collected from 133 migrant women from Myanmar living in the Bangkok Metropolitan Area (BMA). From the results of the study, it is estimated that there are 39,292 children of migrants aged 0-14 years living in the BMA. Among these, approximately 22,907 children are in the age range of 0-2 years, most of whom were born in Thailand. Results reveal that although vaccine services for children of migrants is a major initiative of the Thai health system, immunization coverage is less than that of Thai children and that of non-migrants in their countries of origin. This low coverage level indicates that human migration is a significant factor limiting access to vaccine services. The study also generated key recommendations for better immunization services to children of migrants living in Thailand.*

***Keywords:*** *children of migrants, immunization, vaccine, EPI*

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## Background

Edward Jenner demonstrated the value of immunization against smallpox in 1792. Nearly 200 years later in 1977, smallpox was eradicated from the world through the widespread and targeted use of the vaccine. In 1974, based on the emerging success of smallpox immunizations, the World Health Organization (WHO) established the Expanded Programme on Immunization (EPI). Through the 1980s, UNICEF worked with WHO to achieve Universal Childhood Immunization with the six EPI vaccines to prevent tuberculosis, polio, diphtheria, tetanus, pertussis, and measles, with the aim of immunizing 80% of all children by 1990. Progress has continued since then so that by 2010 a record 109 million children were vaccinated and global immunization rates were at 85%.

In Thailand the Ministry of Public Health (MOPH) has provided vaccinations against preventable and communicable diseases since 1953. The service started with bacillus calmette guerin vaccine (BCG) and smallpox vaccines to prevent tuberculosis and smallpox respectively. Smallpox was eliminated in Thailand by 1962, and immunization services were expanded that year with the addition of vaccines to prevent diphtheria, tetanus and pertussis (diphtheria and tetanus toxoids, and pertussis vaccine combined or DTP), including oral poliomyelitis vaccine (OPV) in Bangkok as a pilot province. However, most of the vaccinations reached children of school age only, and thus the prevalence of vaccine-preventable diseases among children in the country overall remained relatively high (Department of Disease Control [DDC], 2007).

In 1976, based on recommendations from the World Health Organization (WHO), the Thai Ministry of Public Health (MOPH) enhanced immunization services nationwide as a national policy for the Expanded Program on Immunization (EPI). Under this program, the types of vaccines, target groups, ages, and service coverage were revised to be consistent with the global criteria (DDC, 2007). After EPI implementation, the types of vaccines increased to include vaccines to prevent hepatitis B (HB), and Japanese encephalitis (JE). Since 1992, the EPI has achieved significant results with immunization coverage of 85-90% and a substantial reduction in the prevalence of vaccine preventable diseases (DDC, 2008). As a result, Thailand has been one of the most successful countries in strengthening and maintaining an immunization program for children under 5 years of age. A survey in 2008 by the Thai Ministry of Public Health found that the immunization coverage among Thai children was 98-99% for routine vaccines for those less than 1 year of age, and 94-98% for vaccines among those 1-3 years of age (DDC, 2008). However,

the survey did not include children of migrants living in Thailand, nor did it include those in the refugee camps along the border with Myanmar, except for a few migrant children studying in Thai schools.

Although Thailand has been polio-free since 1997, the Polio Eradication Campaign continues to be launched annually in order to cover hard-to-reach target groups, in particular children of migrants. Polio eradication coverage among Thai children aged 0-5 years is 99.0%. The goal since the beginning of this campaign in 1990 has been to strengthen the campaign to cover all children in Thailand, with a focus on children of migrants regardless of their legal status. Currently, the Thai MOPH proposes that the target age for children of migrants is 0-15 years, and aim is to increase coverage to 90% for all migrant children living in the country. (DDC, 2011).

However, the EPI in Thailand has been hindered by several limitations, including the lack of effective approaches to provide continuous coverage to highly mobile populations. Labor demands in Thailand have encouraged labor migration from neighboring countries. The majority of these migrants are from Myanmar, followed by Cambodia and the Lao People's Democratic Republic (Department of Employment [DOE], 2011,). Most migrants from Cambodia and Myanmar are male while the majority from Lao PDR are female (Huguet & Chamratrithirong, 2011). These laborers are largely in the reproductive age group and many travel with families or get married after gaining employment in Thailand (Program for Appropriate Technology in Health [PATH], 2003). Previous studies have reported that these migrants do not usually practice family planning and have limited access to health and contraceptive services (PATH/Thailand & MOPH, 2005). Although the main goal of crossing the border to Thailand is economic, there are also other factors that influence migrants to have children while in Thailand. A large number of these migrants are exposed to misinformation about family planning and hence contraceptive practice among them is not consistent. The availability of reproductive health services in Thailand does not necessarily ensure easy access by migrant women. A recent study found that up to 50% of migrants did not know about the availability of such services and, therefore, had never used them (United Nations Population Fund [UNFPA], 2011).

Although children of migrants are one of the target groups for EPI, the MOPH units responsible for national EPI services have limited information on accurate number of this population currently living in Thailand. Child vaccination initiatives have some unique challenges in that all children who are the target populations not only

must have access to the service, but have to obtain each kind of vaccine at the appropriate number of months after birth, in a certain interval and continuously, to complete the dosage. If the vaccines are not administered according to the prescribed protocols, the child's immune system will not be boosted to be able to prevent the diseases. Mobility among the children of migrants, which is rarely known to program personnel, is the main barrier to achieving the goals of the vaccination campaign. Thus, this dearth of information impedes service provision and hinders the accurate measurement of immunization coverage for children of migrants in Thailand.

The Migrant Health Program of MOPH and the International Organization for Migration (IOM) found that a large number of children of migrants aged over 5 years old had not completed the essential vaccination schedules (Sciortino & Punpuing, 2009). Health Counterpart Consulting (HCC) and PATH/Thailand, in collaboration with the Institute for Population and Social Research (IPSR)-Mahidol University and the Faculty of Archaeology-Silpakorn University, conducted a survey on "Size Estimation of Migrant Populations and Assessment of Migrant Maternal and Child Health (MCH) in Bangkok" from October 2011 to September 2012. Bangkok was selected to be the study area because it has the largest number of migrant workers (DOE, 2011). This survey aimed to estimate the number of migrant workers and their families from Myanmar, Cambodia and Lao PDR currently living in Bangkok, as well as their maternal and child health status. This report focuses on immunization coverage among children of the migrants from Myanmar only; it does not include those from Cambodia and Lao PDR because of the small number of cases from these two countries in the sample. It is hoped that the findings of this study will not only provide information on immunization coverage among children of migrants from Myanmar living in Bangkok, but will also inform the public and private organizations responsible for immunization services for this population group in Thailand.

## Research questions and methodology

This report addresses the following questions:

1) What is the immunization coverage among children of Myanmar migrants in Bangkok? What are the obstacles to receiving the services among these children? And what is their mobility pattern?

2) How can policy implementation improve immunization coverage among children of migrants in Bangkok?

The basic data on immunization coverage in this study are provided by the Thai National immunization service (DDC, 2007), with a focus on five basic vaccines: Tetanus Toxoid (TT), bacillus calmette guerin vaccine to prevent tuberculosis (BCG), diphtheria and tetanus toxoids, and pertussis vaccine combined (DTP), oral poliomyelitis vaccine (OPV), hepatitis B vaccine (HB) and Japanese encephalitis Vaccine (JE)

The protocol for vaccines for maternal and child health in Thailand is as follows;

- Vaccine for pregnant women: TT (given during the antenatal care)
- Vaccines for children aged 0-1 year: BCG, HB1, 2 and 3, OPV1, 2 and 3, DPT1, 2 and 3 and Measles vaccine
- Vaccines for children aged 1-2 years: OPV4, DTP4 and JE1 and 2
- Vaccines for children aged 2-3 years: JE3

Vaccine coverage in this study focused on children in the following age groups:

- *Children of migrants aged under 1 year:* For this group we look at immunization coverage for pregnant women during antenatal care (TT/dT2)
- *Children of migrants aged 12-23 months:* The focus of study for this group is the coverage of immunization for children age 0-1 year who are supposed to have BCG, HB3 (third dose of Hepatitis B vaccine), OPV3 (third dose of oral poliomyelitis vaccine), DPT3 (third dose of diphtheria, tetanus toxoids, and pertussis vaccine combined) and measles vaccine.
- *Children of migrants aged 2 years:* For this group we look at coverage of immunization for children aged 1-2 years who are supposed to have OPV4, DTP4 and JE2.
- *Children of migrants aged 3 years:* immunization coverage for 2-3 years vaccine (JE3).

The study also explored immunization coverage for the polio vaccine during the Polio Eradication Campaign for the year 2011. The campaign focused on both Thai children aged between 0-5 years, and non-Thai children aged 0-14 years. The service has been provided annually since 1990, two times in two successive months in December and January (DDC, 2011). However, the campaign in 2011 was conducted in January and February 2012; the delay was due to severe flooding in Thailand in late 2011.

The study employed quantitative and qualitative methods. The interviews were conducted in the native language of the target respondents. For the quantitative survey, a bilingual Thai-Burmese questionnaire was administered by Thai and migrant interviewers working together. The language used for the interviews was usually Burmese, but for a small number of cases Mon and Shan languages were also used. For the qualitative interviews, focus group discussions were conducted by facilitators who spoke Burmese and Mon, with a simultaneous translation to the researchers throughout the sessions.

The fieldwork was conducted in the Bangkok Metropolitan Area. The sampling procedure to select study sites was conducted in collaboration with the National Statistical Office of Thailand by employing the Enumeration Areas (EA) used for the 2010 census. The sample EAs were randomly selected based on the number of foreign workers living there. EAs were grouped into three categories: 1) those with 1,001 foreign migrants or more are classified as high density; 2) those with 201-1000 foreign workers were classified as moderate density, and 3) those having 1-200 foreign workers were classified as low density. Altogether, 21 EAs were selected; these were drawn from 18 of the 50 administrative districts of Bangkok. Interviews were conducted with migrant women from Myanmar who were living with partners and have children.

The field survey reached 1,847 target migrants in 654 households in the sampled EAs. Among these sampled women, 798 were living with partners. However, since the focus of the study is on immunization coverage of the migrants' children, only interviews with migrant women who have children aged 0-15 years are included in this analysis. Thus the source of information on immunization coverage described in this paper is drawn from 331 women: slightly more than three-fourths of these have children living with them in Thailand, while the rest have children living in their home country, Myanmar. Altogether, the interviews provide details of immunizations for 541 children aged 0-15; about half of these children were living in Thailand at the time of the survey.

After the preliminary analysis of the quantitative data, focus group discussions with 32 Myanmar migrant women were conducted to obtain qualitative information. These women are from four different ethnic groups, Burmese, Mon, Tavoy and Nepalese. In addition, a focus group discussion was also conducted with a group of 7 Myanmar men living in the study EAs.

## Results

### a) Characteristics of sampled women

The household survey was able to identify the following proportions of migrants by country of origin: Myanmar 84.4%, Cambodia 11.0% and Lao PDR 4.6%. Among the migrant women living with partners, 87.5% came from Myanmar, with only a few from Cambodia and Lao PDR (8 % and 4.5% respectively). None of the migrant women from Cambodia and Lao PDR in this study have children currently living with them, partly because these women worked and lived in construction sites in which children are not allowed.

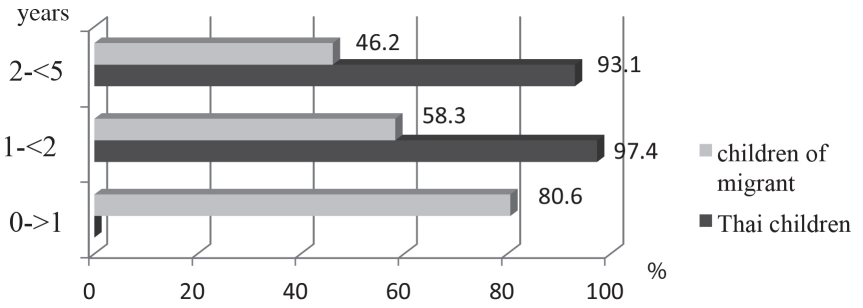
Most of the migrants in this study were in the working ages: 12.6% were between the ages of 15-19 years, 47.5% were in the age-group of 20-29, and 24.4% were between 30-39. Only 9.6% were over 40 years of age and 5.7% were children below age 15. About 96% of the sampled women were living with their partners at the time of interview. The mean age of these women was 29.6 years with the maximum age of 42 years and the minimum age of 18 years. At the time of the survey 6.3% of the migrant women were pregnant, and 72.6% had children living in Thailand or in their home country.

### b) Routine Immunization: Coverage and obstacles

One of the important findings about immunization coverage in this survey is that the vaccination service records in the Maternal and Child Health (MCH) folder given to the women by the hospital after the child's birth were not being used by many of the migrant families. Only 65.6% of the 125 children of migrants less than 5 years old in this study had retained their MCH vaccination record. About 80% of the children less than 1 year old had the MCH folder. However, as children grew older the proportion who kept MCH vaccination records declined to 58.3% among those 1 year old and 46.2% among those aged 2–4 years old. The proportions of

migrant children with MCH folders are much lower when compared to Thai children; nearly 100% of these have kept their records, as shown in Figure 1.

**Figure 1:** Proportion of children of Myanmar migrants who keep and use the maternal and child health folders compared to that of Thai children, by age group (%)




**Note:** Data for Thai children less than one year old not available

Data on coverage of tetanus or TT/dT2 during antenatal care (ANC) are not available; there often was no record of this vaccine in the MCH folder, especially among those who used ANC and delivery services at private hospitals. However, since the ANC rate among the migrant women in the study area was high (98.8%) and since about 93% reported that they received a vaccine during their ANC visits, it could be assumed that most of them received the TT/dT2 in Thailand.

Coverage of vaccinations for children aged less than one year old and 1-2 years old is measured with a small sample size, due to the fact that very few children of migrants had MCH vaccination records. For vaccines given during the first year after birth, the coverage rate was 82.6% for BCG, 69.6% for DTP-HB3, 69.6% for OPV3 and only 60.8% for Measles. These rates are lower than those of Thai children, which are 98-99% for all types of vaccines. Coverage of vaccines for children aged 1-2 years was even lower: 63.6% for DTP4, 63.6% for OPV4, 45.6% for JE2 and 54.5% for JE3 vaccines (see also Figures 2 and 3).

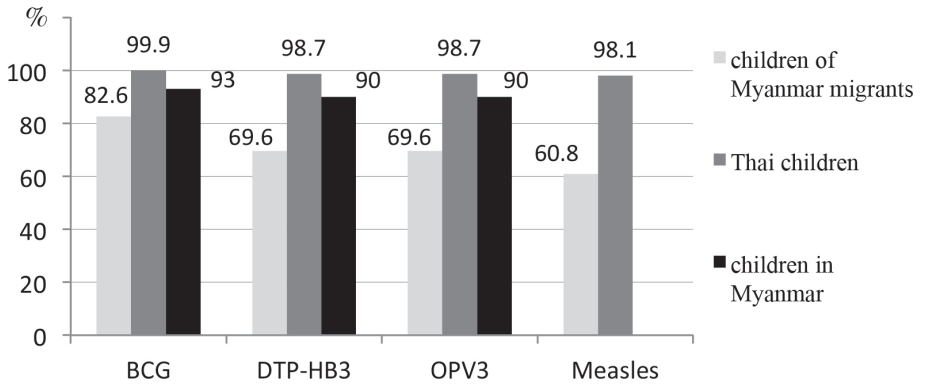
The main obstacle for migrant families in accessing vaccination services was a lack of information on appointments. It was clear from the study that all hospitals in Bangkok provided MCH vaccination records, including the date of the appointment in Thai. Therefore, most migrant mothers were unable to read the appointment date. Some sought language assistance from their Thai neighbors; nevertheless, the language problem is the main barrier to vaccination services use among these migrants.

In addition to the language barrier, many migrants were unable to keep their appointments simply because they had to work. Some did not understand the schedule of vaccinations for children of various ages; they just took it for granted that children had already completed their vaccinations. Moreover, since a number of migrant children became sick before or after the service, the mothers refused to fulfill their next appointment. Also, many migrant parents did not seek vaccination services due to their undocumented status in Thailand. For the children of migrants who travelled across the border to Thailand, most got some vaccination services in their home country (Myanmar) but did not complete the schedule once they were in Thailand. Discontinuation of vaccination services was mainly due to a lack of service information. The focus group discussion data suggests that once the women missed an appointment, many of them tended to drop out from using vaccination services because they feared being scolded by the health providers.

The lack of MCH vaccination records is another important limitation for the vaccination program, as well as for this study. The main reason why migrant mothers do not keep the MCH booklet is misunderstanding about recommended ages for vaccinations. Respondents were able to associate the MCH folder with the schedule for vaccinations, but only for the first 1 or 2 years after child birth. Promotion for keeping and using the MCH vaccination record appropriately both in Thailand and in the country of origin is thus recommended.

Figure 2 gives a comparison of immunization coverage for vaccine services to be given in the first year among three groups of children: children of Myanmar migrants living in Bangkok, Thai children, and Myanmar children living in Myanmar. Information in Figure 2 is drawn from various sources (DDC, 2008; WHO & United Nations Children's Fund [UNICEF], 2011) including reports given by the children's mothers. Results show that migrant children living in Bangkok received first year vaccination services substantially less frequently than Thai children and those living in Myanmar.

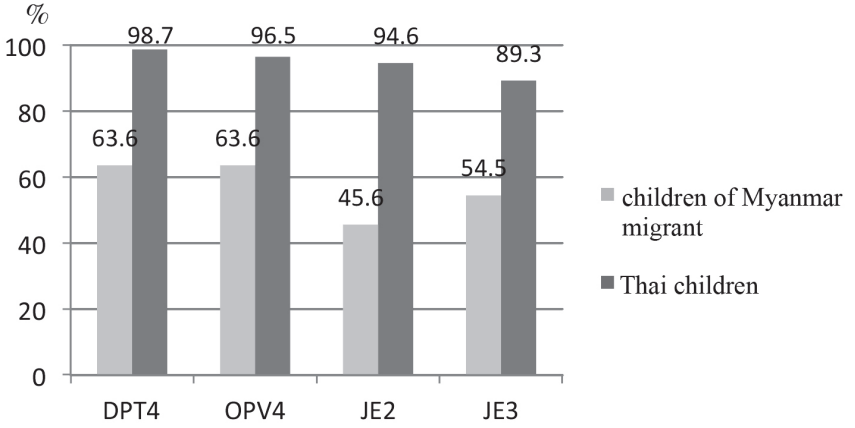
**Figure 2:** Coverage of first year vaccinations among children of Myanmar migrants in Bangkok, Thai children and Myanmar children living in Myanmar (%)




**Note:** Coverage for children living in Myanmar is based on WHO/UNICEF estimates, 2010. This source does not give data on measles.

Coverage of DTP4, OPV4, JE2 and JE3 vaccines among migrant children aged 1-3 years living in Myanmar are not available for comparison due to differences in the vaccination schedule of the two countries. The comparison is thus made between Thai children and migrant children living in Bangkok. The results show substantial differences between children of the two groups, as shown in Figure 3.

**Figure 3:** Comparison of immunization coverage for children aged 1-3 years: Myanmar migrants living in Bangkok and Thai children (%)

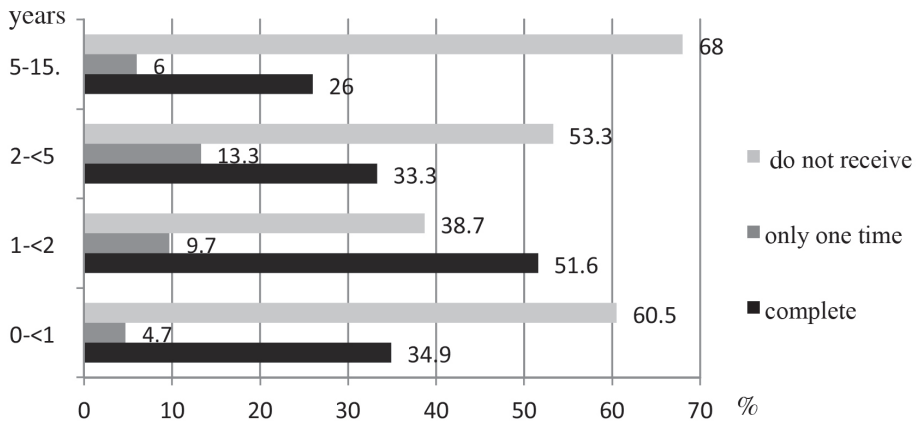


This analysis of vaccination coverage in origin and destination countries revealed that children of migrants tend to drop out from vaccination services much more than non-migrants. This finding suggests that access to basic vaccination services for migrant children remains a challenge, despite better health infrastructure in the place of destination (Bangkok).

### c) The Polio Eradication Campaign: Coverage and obstacles

The survey included 161 children of migrants aged 0-15 years who live in Bangkok. Results of the analysis reveal that, overall, only 34.6% of these children had received two doses of the polio vaccine and 56% did not receive any polio vaccine during the campaign (percent not shown in Figure 4). The coverage of polio vaccine by age group is given in Figure 4.

**Figure 4:** Proportion of migrant children who received polio vaccine during the Polio Eradication Campaign, by age-group




According to information from the women included in the study, the main reason for not receiving the polio vaccine was due to a lack of information about the campaign. Although about two-thirds (about 77%) of migrant mothers heard about the campaign, many of them had incorrect information. Only 2.2% could correctly answer the questions about the appropriate age when children should receive the polio vaccine, and less than one in five (18.6%) could identify the number of vaccinations accurately. The qualitative data suggest that the migrant mothers are confused about the target age of children in the campaign in Thailand and in

Myanmar (0-5 years). A large number of migrant children did not receive the vaccine as a result of their mothers' misunderstanding. Mothers tended to assume that if children receive the basic polio vaccination in the first five years after birth, they do not need to repeat it in the annual campaign.

Based on the findings above, campaign promotion and education are keys to the success of the annual Polio Eradication Campaign for migrant children aged 0-15 years. An appropriate method may be to use interpersonal communication between mothers or volunteers who can understand the same language to effectively spread campaign information. The success of this method has already been demonstrated by the work of NGOs and/or Migrant Health Volunteers (MHV) in the areas where polio vaccination for migrant children had the highest rates of completion.

### d) Children of migrants and their mobility patterns

As mentioned earlier, the mobility of migrant children is one of the key obstacles to complete the child vaccination schedule. Analysis of information from 331 migrant women in the sample who have children living in Thailand and/or in their home country (Myanmar) revealed an interesting mobility pattern across the border. The survey was able to collect information about the place of birth and current place of residence for 541 children of migrants in the study area. About 89% of the children who were less than one year of age were born in Thailand. For other age groups, the percentage of those born in Thailand was 50% among those 12-23 months old, 34.3% among those 2-4 years old, and 12.6% among those 5-14 years old. As for the current place of residence, most of the children aged less than 1 years and 12-23 months are living in Thailand; for the older age groups the proportion living in Thailand decreases sharply to about 10% in the age group 5-14 (Figure 5). This finding is supported by qualitative information from focus group discussions which suggests that the migrants are likely to send their children aged 3 years and older back to their home country for educational purposes.

According to our data, about 92% of the migrants' children aged less than 2 years old were born in Thailand and currently living there at the time of survey. Only 8% were born in the country of origin (Myanmar) and moved to Thailand later. As a result, immunization services for children in this age-group is the responsibility of the Thai health system. This includes an appropriate mechanism to bring the children of migrants who have moved across the border to continue vaccination services in Thailand.

**Figure 5**: Country of birth and country of current residence of migrant children by age group

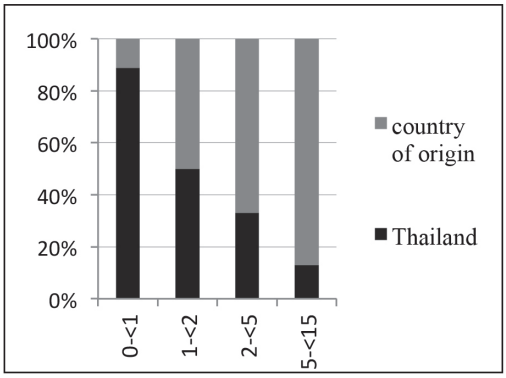



Figure 5.1: Country of Birth

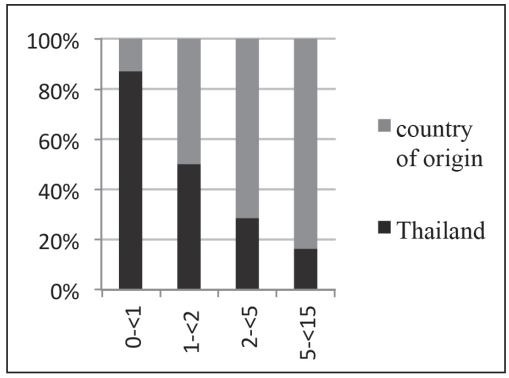



Figure 5.2: Country of current Residence

## Summary and Recommendations

Recent estimates of foreign migrant workers in Bangkok suggests that there are more than 32,000 children of migrants living here with their parents. Among these, 22,907 children are younger than 2 years old, meaning that they are a target group for basic immunization. The rest (about 9,000) are older children who are the target for the polio eradication campaign (HCC, PATH/Thailand, IPSR & Silpakorn University, 2012). However, this study found that the proportion of these children who received complete immunizations and vaccines is low. The rates of complete immunization and vaccination are much lower when compared to Thai children and Myanmar children living in their home country. It was also found that the main barriers that keep these rates low have to do with language, campaign strategies, a low level of awareness and mobility among the migrants.

Based on the results of this analysis, the following recommendations are made with the aim to improve immunization coverage among children of migrants living in Bangkok Metropolis and those in Thailand as a whole:

1. Make accurate estimations of the number of migrant children in each catchment area in order to better plan for vaccine storage, manpower and service delivery.

2. Improve mechanisms to create awareness of immunization, appointment management and continuing vaccination for migrants who live in Thailand, including the right to access services regardless of legal migration status.

3. Develop appropriate approaches for post-natal care to follow up migrant mothers and enable them to continue and complete the vaccination schedule.

4. Strengthen migrant-friendly vaccination services by:

    - Raising awareness among health personnel of children of migrants' rights to health and vaccination, including an emphasis on the country EPI policy to include all children living in Thailand;

    - Using bilingual MCH vaccination records in areas with many children of migrants, including education on the importance of keeping the vaccination record while in Thailand and when moving back to their home country.

    - Communicating accurately with migrant mothers about appointments.

5. Employ outreach vaccination services during the polio eradication campaign to reach the children of migrants effectively, and to build trust for receiving routine immunizations at the Thai health posts.

6. Collaborate with NGOs who work with migrants, community-based migrant groups and Migrant Health Volunteers (MHVs) to identify and reach migrants effectively without language barriers.

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