Sex-disaggregated immunization coverage data: Input from key stakeholders

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<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
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<tr>
<td>EPI</td>
<td>Expanded Programme on Immunization</td>
</tr>
<tr>
<td>GAVI</td>
<td>Global Alliance for Vaccines and Immunisation</td>
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<tr>
<td>HMIS</td>
<td>Health Management Information System</td>
</tr>
<tr>
<td>HPI</td>
<td>Health Partners International</td>
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<tr>
<td>MICS</td>
<td>Multiple Indicator Cluster Survey (United Nations Children’s Fund)</td>
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<tr>
<td>NFHS</td>
<td>National Family Health Survey (India)</td>
</tr>
<tr>
<td>PATH</td>
<td>Program for Appropriate Technology in Health</td>
</tr>
<tr>
<td>PRRINN</td>
<td>Partnership for Reviving Routine Immunization in Northern Nigeria</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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Background

In 2009, the GAVI Alliance launched a gender policy aimed at strengthening the integration of gender issues in immunization-related efforts. Within this context, the World Health Organization’s (WHO) Initiative for Vaccine Research spearheaded a collaborative project focusing on the role and impact of gender and sex on immunization coverage, including demand for and access to services. PATH was invited by WHO to contribute lessons from its global and field-based immunization programs as part of the broader GAVI/WHO project on gender and immunization.

The purpose of PATH’s engagement was to strengthen understanding about the specific contexts in which sex disparities in coverage exist and the data sources and methodologies that are available or needed to build knowledge in this area. PATH focused specifically on assessing availability of and challenges with collecting and reporting sex-disaggregated routine coverage data and on the potential of using such data to identify gaps and strengthen understanding of factors underlying identified disparities. The premise of this work was concern that surveillance data are not routinely disaggregated by sex and that potential disparities and gaps in coverage may be missed as a result.

The lessons of PATH’s work complement analyses of Demographic and Health Survey (DHS) data and qualitative reviews of existing literature being conducted by the Swiss Tropical Institute, and were meant to facilitate triangulation of data with information emerging from those analyses. This report focuses on the specific component of PATH’s work related to the availability, collection, and potential use of sex-disaggregated coverage data and the gaps therein.

PATH immunization efforts

PATH implements a range of immunization-related initiatives through its country and field offices. Many of these are implemented in partnership with PATH’s global vaccine access and delivery program, which aims to reduce morbidity and mortality from vaccine-preventable diseases by using new, traditional, and underutilized vaccines. These include vaccines against Japanese encephalitis, rotavirus, polio, diphtheria, hepatitis B, measles, pertussis, tetanus, human papillomavirus, and tuberculosis, among others.

PATH accomplishes this work through collaboration with global institutions, government entities, and national immunization programs in several countries (including Burkina Faso, Cambodia, India, Kenya, Nicaragua, Senegal, and Vietnam). These collaborations aim to develop strategies, tools, and procedures to enhance immunization service delivery; improve the quality and management of programs; establish robust, sustainable systems for surveillance and diagnosis; and facilitate access for the most vulnerable populations.

* Gender is defined as “the characteristics, roles, and responsibilities ascribed to (deemed to be appropriate or inappropriate for) men and women, in a specific social context or environment.” Gender differs from sex, which refers to the unchangeable biological and physiological characteristics that define women and men.
Methodology

PATH gathered information from thirteen countries† related to the collection and reporting of sex-disaggregated coverage data. Initial consultations were held with country counterparts working with ministries of health and Expanded Programme on Immunization (EPI) managers in India, Nicaragua, and Vietnam, as well staff from the PATH/WHO Optimize project.‡ These consultations identified an initial list of gaps and challenges related to sex-disaggregated data as well as potential sources of data that could be analyzed for evidence of sex disparities in coverage.

Following these consultations, PATH developed a sixteen-question survey to gather information from staff and partners engaged in immunization efforts regarding:

- Current status of sex-disaggregated immunization coverage data.
- Gaps in collection of sex-disaggregated data and their use.
- Perceived value of sex-disaggregated data.
- Suggestions for improvement in the collection of sex-disaggregated data.

Survey respondents comprised PATH staff from fourteen country and global programs representing work in thirteen countries. The programs surveyed implement a wide range of immunization-related work, including providing technical assistance to ministries of health and national EPI programs, spearheading formative research to guide the development of strategies for the meaningful and successful introduction of vaccines, strengthening cold chain technology, and conducting clinical trials. Respondents included technical officers, program directors, managers, and researchers. Phone calls were used to follow up and clarify points raised in response to the survey.

PATH also carried out focus group discussions and in-depth interviews with implementers of community- and facility-based immunization programs in India and Nigeria to gather information about challenges with collection and reporting of sex-disaggregated routine surveillance data. PATH selected India and Nigeria as focus countries for the following reasons:

a) Both countries reflect low overall coverage rates at the national level—in the case of Nigeria, immunization coverage is one of the lowest in the world, and in the case of India, certain regions have disproportionately low coverage rates.

b) Studies in both countries highlight pervasive gender-related issues, including, but not limited to, women’s mobility, access to and control over household resources, sex-preference for boy children, and interpersonal violence.

c) PATH either has strong immunization-related initiatives and relationships with key stakeholders, as in the case of India, or strong partnerships with organizations engaged in

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† Burkina Faso, Cambodia, China, El Salvador, India, Kenya, Nicaragua, Nigeria, Senegal, South Africa, Tanzania, Uganda, Vietnam.

‡ The Optimize “Immunization Systems and Technologies for Tomorrow” project is a collaboration between PATH and WHO with a mandate to leverage research, technology, and scientific advances to define the ideal characteristics and specifications for health products, and create a vaccine supply chain flexible and robust enough to handle an increasingly large portfolio of vaccines and work efficiently with the delivery of other health commodities.
country-level efforts to strengthen coverage, as in the case of Nigeria, with Health Partners International (HPI) and the Partnership for Reviving Routine Immunization in Northern Nigeria (PRRINN).

In related work, PATH conducted additional focus group discussions with female and male parents and caregivers to deepen understanding of broader gender-related factors that impact coverage, including demand for and access to immunization services. Findings from this component were presented to WHO separately and integrated into the analysis and summary prepared by the Swiss Tropical Institute.¹

In India, PATH conducted a series of nine focus group discussions in Jaipur, Rajasthan state: one with facility-based health care providers, two with community immunizers, two with female parents, one with other female caregivers, two with male parents, and one with other male caregivers. In Nigeria, PATH subcontracted with HPI and PRRINN to conduct focus groups discussions in rural Jigawa state in northern Nigeria and in Lagos, the largest urban area and former capital city, offering the opportunity to contrast findings from the two very different regions. In Jigawa, focus group discussions were conducted with female and male parents, female caregivers, community immunizers, and facility-based health care providers. Similar discussions were conducted in Lagos with female and male parents, female caregivers, community immunizers, and facility-based health care providers. See Table 1 for an overview of participants.

**Table 1. Number of participants in focus group discussions in India and Nigeria.**

<table>
<thead>
<tr>
<th>Participants</th>
<th>Rajasthan state, India</th>
<th>Lagos, Nigeria</th>
<th>Jigawa state, Nigeria</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility-based service providers</td>
<td>n=11</td>
<td>n=12</td>
<td>n=12</td>
<td>35</td>
</tr>
<tr>
<td>Community immunizers</td>
<td>n=13, n=14</td>
<td>n=12</td>
<td>n=16</td>
<td>55</td>
</tr>
<tr>
<td>Female parents</td>
<td>n=13, n=13</td>
<td>n=12</td>
<td>n=10</td>
<td>48</td>
</tr>
<tr>
<td>Male parents</td>
<td>n=10, n=14</td>
<td>n=12</td>
<td>n=10</td>
<td>46</td>
</tr>
<tr>
<td>Female caregivers</td>
<td>n=11</td>
<td>n=12</td>
<td>n=10</td>
<td>33</td>
</tr>
<tr>
<td>Male caregivers</td>
<td>n=11</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>60</strong></td>
<td><strong>58</strong></td>
<td><strong>228</strong></td>
</tr>
</tbody>
</table>

**Current status of sex-disaggregated immunization coverage data**

Twelve out of thirteen countries represented in PATH consultations and survey results include a category for recording the sex of the person being vaccinated on data cards/records used at points of service (including health facilities, schools, community-based campaigns, and “immunization day” campaigns). These data are therefore available at the primary care level. The only country surveyed that did not include a section for immunizers to note the sex of the person being vaccinated was Cambodia. We understand, however, that data forms were being revised to include sex as a category, and new forms were expected to be ready for use by the end of 2010. As noted below, however, these data are not often analyzed or used beyond collection.

In addition, national-level surveys, such as the DHS conducted at different intervals in more than 100 countries and the United Nations Children’s Fund Multiple Indicator Cluster Surveys (MICS), offer a wealth of comparable and comprehensive national-level health data, including
on overall coverage rates, that are easily analyzable by sex. Similar surveys such as the Indian National Family Health Survey (NFHS)\(^2\) have been conducted to complement the DHS. The NFHS is carried out with greater frequency and with larger samples than the DHS. A few immunization-specific surveys, including a 2009 EPI national-level coverage survey in Vietnam\(^3\) and the 2007 National Immunization Cluster Survey in Nigeria\(^4\) have also been conducted specifically to evaluate coverage of routine childhood immunizations.

In general, available evidence does not point to significant sex disparities in overall global immunization coverage for fully vaccinated children. The analysis of global DHS data being conducted by the Swiss Tropical Institute reveals that, even when controlling for factors such as education and economic status, the sex of the vaccinated was not a statistically significant factor correlated with global coverage.\(^5\)

Data collected through PATH consultations confirm this general finding. Cross-tabulation analysis conducted by PATH of data from the 2006/2007 DHS Nicaragua survey\(^6\) and results from the cluster survey in Nigeria revealed no significant sex disparities in coverage. The EPI survey in Vietnam also revealed no statistically significant sex disparities in coverage, as indicated in Table 2.

### Table 2. Results of an EPI survey in Vietnam on sex disparities in vaccine coverage.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>All doses by time of survey (via vaccination card or recall)</th>
<th>Boys</th>
<th>Girls</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td></td>
<td>100%</td>
<td>99%</td>
<td>99-100%</td>
</tr>
<tr>
<td>DTP3</td>
<td></td>
<td>99%</td>
<td>98%</td>
<td>96-100%</td>
</tr>
<tr>
<td>MCV1</td>
<td></td>
<td>98%</td>
<td>98%</td>
<td>96-100%</td>
</tr>
<tr>
<td>Fully immunized children</td>
<td></td>
<td>96%</td>
<td>95%</td>
<td>90-100%</td>
</tr>
</tbody>
</table>

**BCG:** Bacillus Calmette-Guérin vaccine to prevent tuberculosis; **DTP3:** a combination of vaccines against three infectious diseases: diphtheria, pertussis, and tetanus, given in 3 doses; **MCV1:** Measles-containing vaccine, first dose, usually given at 9-11 months. **Fully immunized children** must have completed BCG1; DPT1, DPT2, DPT3; (oral polio vaccine) OPV1, OPV2, OPV3; (hepatitis B vaccine) HB1, HB2, HB3; and measles vaccines before they reach 12 months of age.

There are a few notable exceptions to this general observation, primarily in South Asian countries where overall coverage is low. In India, for example, complete age-appropriate coverage still hovers at about 50%. There is, however, wide variance in coverage rates between states in India. While coverage in many southern states is relatively high, coverage in some northern states, including Arunachal Pradesh, Assam, Bihar, Jharkhand, Madhya Pradesh, Nagaland, Orissa, Rajasthan, and Uttar Pradesh, remains extremely low.\(^7\) Sub-national data are therefore critical in many regions in order to effectively target resources and interventions, and provide a richer, nuanced picture of coverage challenges.

In addition to low coverage rates, data from India reflect significant sex disparities in coverage. Analysis of 2001 DHS data cross-checked with MICS data suggested a difference in full coverage of 13.4% in favor of boys.\(^8\) Analysis of three rounds of NFHS data between 1992 and 2006 also revealed that girls consistently have lower coverage than boys, as shown in Table 3, although the differentials do not appear to be as wide in these surveys.\(^9\) Sex disparities in coverage also varied widely by state in India.
Table 3. Immunization coverage rates as measured by the Indian National Family Health Survey.

<table>
<thead>
<tr>
<th>Survey</th>
<th>Percentage of fully immunized children 12–23 months</th>
<th>Boys</th>
<th>Girls</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFHS I (1992–1993)</td>
<td></td>
<td>36.7%</td>
<td>34.1%</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>NFHS II (1998–1999)</td>
<td></td>
<td>43.1%</td>
<td>40.9%</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>NFHS III (2005–2006)</td>
<td></td>
<td>45.3%</td>
<td>41.5%</td>
<td>p&lt;0.001</td>
</tr>
</tbody>
</table>

The same 2001 analysis of DHS and MICS coverage data highlighted sex disparities in Pakistan (a 7.8% differential in complete immunization between boys and girls), Nepal (4.3% difference), and Cambodia (4.9% difference). Sex disparities were not limited to Asia. In East and West Africa, Gabon showed a 7.2% difference in coverage; Gambia a 6.7% difference; Côte d’Ivoire a 4.5% difference; Ethiopia a 4.3% difference; and Sierra Leone a 3.6% difference.¹⁰ (These data represent surveys from 2001 or before, and many major changes in coverage have taken place since then.)

Analysis of a coverage survey conducted in 2010 in the low-performing states of Jharkand and Jamtara in India at first revealed no significant sex disparities in coverage. When the data were reanalyzed to include the sample denominator children who had cards but had not been vaccinated and those without cards, they highlighted much larger sex differences in timeliness of coverage for the BCG vaccine. Specifically, data from the three groups together showed that 72% of boys versus 40.3% of girls had been vaccinated at 1 month, and 83% of boys versus 67.2% of girls had been vaccinated at 12 months.¹¹

While this difference could have resulted from recall bias or other methodological issues, the reanalysis highlights a potential issue around sex differences in card possession—that girls in some families or communities may not be given immunization cards—which could ultimately skew analyses that relied on data from those cards. The issue of sex differentials in card possession was also raised by PATH staff in India, who noted that they have observed parents, especially in many northern states, who did not have or keep vaccination cards for their daughters.

Gaps in sex-disaggregated coverage data and their use

While our data demonstrate that information related to sex is gathered at the point of care, our analysis also clearly demonstrates that this information is generally not collated, reported, analyzed, or used beyond its collection. For example, PATH’s surveys and discussions highlighted that ministries of health and other responsible government entities in Burkina Faso, Cambodia, India, Indonesia, Nicaragua, Nigeria, Senegal, and Vietnam do not mandate EPI managers or health providers to report sex-disaggregated routine coverage data—only overall coverage rates. Those interviewed noted that few of the countries that have been identified by GAVI or WHO as low coverage countries needing priority attention require reporting of sex-disaggregated data.

Views on whether collating and reporting on sex-disaggregated data is feasible and realistic in developing country settings are mixed. About half of the responses to the surveys highlighted that reporting on sex-disaggregated data would place an additional burden on point-of-care
service providers and their existing workloads. In addition, three of twelve interview respondents emphasized that in many countries, strengthening sex-disaggregated data would require a substantial amount of capacity-building for service providers to ensure that the data would be collated and reported accurately.

In the other half of survey responses, collection and reporting of sex-disaggregated data was not seen as an onerous burden. Service providers and immunizers interviewed in India and Lagos, Nigeria, also did not consider strengthened collection and reporting of sex-disaggregated data to be a significant burden, but rather something they could easily incorporate into their daily routines, given the right tools. The need for easy-to-use, standardized data capture forms and clear protocols was a consistent theme. In India, for example, the collation of such data is facilitated by widespread use of simple forms and registers as well as clear reporting mechanisms across the country.

The major challenge appears to be collating information from the data cards onto summary forms and transmitting accurate summaries for use at higher levels. The perception is that routine data reporting in many countries is weak and subject to significant error due to double counting, miscounting, and other issues, and that adding an additional reporting component could further compromise the data.

Specific examples of challenges related to reporting or use of data raised include:

- In Nigeria, sex-specific data are collected for BCG, oral polio vaccine, hepatitis B, DPT, measles, yellow fever, and tetanus coverage at the point-of-care level in urban Lagos but not in Jigawa state. In Lagos, summary data not disaggregated by sex are collected after each clinic day and forwarded to the National Program on Immunization each month. Facility-based immunizers and EPI managers, however, noted that the data capture tools (registers, tally sheets, and monthly summary forms) developed at the federal level and used throughout the country currently have no specific columns to record sex. Since sex is captured only in child health cards and registers, analysis by sex is currently only possible through surveys such as the National Immunization Coverage Survey. A new harmonized Health Management Information Systems (HMIS) form scheduled to be rolled out in 2011 includes a category for sex—but sex-disaggregated data for immunization will still be available only through the immunization registers. Immunizers and EPI managers highlighted that strengthening the HMIS and overall data collection capacity was a top priority in all the states in which they were working, and many noted that sex-related data should be an important component to incorporate.

- In India, where sex-disaggregated data are routinely collected and collated at facilities and during campaigns, there seemed to be consensus that disaggregating data did not pose an undue burden. However, service providers, community immunizers, and EPI managers interviewed were unable to articulate whether those data were analyzed or used at higher levels in strategic planning or monitoring processes. Many participating in focus group discussions believed strongly that sex disparities in coverage existed in their communities, but were not confident about the evidence supporting this assertion. They were aware only of overall coverage rates.
Immunizers participating in focus group discussions in India highlighted that:

“Though disaggregated data (are) collected, the process of data collection seems to be a formality used only for tracking cases. The data (are) not being concretely used by health managers to improve performance and to strategize for gender-specific programming.”

“...we don’t analyze it or do anything further with it. We send it to the Block Office.”

In Nicaragua, routine coverage data from facilities and campaigns are collated and reported via a monthly report compiled by the Ministry of Health, but these data are not currently disaggregated by sex. Analysis by sex is therefore only possible through data from the DHS. All the staff, service providers, and EPI managers interviewed agreed that reporting by sex would not pose an undue burden given the strong data collection mechanisms and data capture tools available.

While DHS and MICS datasets are disaggregated by sex and easily accessed, they are not available for all countries and information may be several years out of date. In addition, the data are not usually reported by sex or analyzed to uncover potential gender-based coverage inequities that may be hidden in national averages. Introduction of vaccines given to adolescents and adults, such as the HPV or Meningitis A vaccine, highlights the need for sex-disaggregated immunization data across the lifecycle to gauge potential disparities.

**Perceived value of sex-disaggregated data**

Responses were also mixed with respect to the perceived utility of sex-disaggregated data for improving overall coverage, and whether strengthening the collection of such data should be prioritized (independent of whether this would add an undue burden). The large majority (70%) of survey respondents felt that sex-disaggregated data should be strengthened as a priority, and that such data would be very useful in policy development and program planning. Many highlighted in particular the potential value of these data in targeting resources and interventions where they might make the most difference with respect to coverage. Immunizers in India and Nigeria indicated strong support for strengthening the collection and reporting of sex-disaggregated data as a way of identifying gaps in coverage and tracking progress.

Three respondents however felt that strengthening sex-disaggregated data should not be a priority and would not be valuable in improving overall coverage—the ultimate goal. Broadly stated, the perspective of these three interviewees was that emphasis should be placed on overall rates, and if those are improved to the point at which only a small percentage are not vaccinated, it would demonstrate that boys and girls, women and men are all getting vaccinated.

Some of the responses from community immunizers in India highlighted earlier reflect their belief that there are skewed sex ratios, but at their levels, not much is done to analyze and use the data to improve programs and make them more gender-sensitive. The following quote succinctly captures this point:

“Health policy cannot be gender sensitive unless informed by age and sex-disaggregated data and gender-sensitive analysis. Despite this acknowledged importance, there is a lack of systematic collection and a lack of analysis and reporting on age and sex-disaggregated data in immunization.”\(^\text{12}\)
Suggestions for improving collection of sex-disaggregated data

As noted earlier, collection and reporting of sex-disaggregated data requires standardized and consistently used immunization cards and data capture forms and tools; procedures and protocols for reporting; and strong data collection capacity among service providers and immunizers. The data are widely available at the point-of-service level. Capturing it efficiently and accurately remains the challenge. Attention should be paid to who has and does not have a vaccination card, and whether sex differences in card possession may skew analysis of coverage data.

Further, analysis of sex-disaggregated data at the sub-national, state, and community levels is not generally taking place. This analysis would appear to provide important information for countries that have low overall coverage rates, countries where sex-disparities have been documented, or in areas where policymakers and immunizers suspect disparities may exist.

Coverage data from India provide an interesting glimpse into this issue. The NFHS survey data revealing sex disparities in coverage highlighted earlier resonate with previous studies that documented inequities in full coverage disadvantageous to girls in as many as ten of India’s seventeen states. What should be noted is that many of the states with the lowest ratios of girl-to-boy immunization coverage perform above the national average in terms of overall coverage. As shown in Table 4, 60.1% of children in Haryana and 61.1% in Punjab had full, age-appropriate coverage, yet these two states have some of the greatest sex disparities in coverage—an inequity that could have remained “hidden” without additional state-level analysis.

**Table 4. Percentage of fully vaccinated children and girl-to-boy coverage ratios for select states in India (2005-2006).**

<table>
<thead>
<tr>
<th>State</th>
<th>% children fully covered</th>
<th>Girl-to-boy coverage ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goa</td>
<td>76.8</td>
<td>0.96</td>
</tr>
<tr>
<td>Delhi</td>
<td>64.8</td>
<td>0.93</td>
</tr>
<tr>
<td>Punjab</td>
<td>61.1</td>
<td>0.87</td>
</tr>
<tr>
<td>Haryana</td>
<td>60.1</td>
<td>0.90</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>59.6</td>
<td>0.90</td>
</tr>
</tbody>
</table>

NFHS III data and state-level sampling weights were used for these figures. \( p \leq 0.001 \)

In addition to inadequate data on sex disparities in low coverage areas, additional information is needed to understand key gender-related issues that may influence the likelihood that more girls or boys may be vaccinated. As one example, the same analysis highlighted an interesting concern around “family balance.” The data show that girls with surviving older sisters are less likely to be immunized than boys with older sisters, unless those girls also have older brothers. This gap increases with birth order. Girls who are born third to a family with two older sisters, for example, are extremely disadvantaged compared to boys born third with two older sisters. These nuances should be teased out in areas where disparities have been documented.

Coverage rates in northern Nigeria are some of the lowest in the world. According to the 2007 national survey, less than 10% of infants in the states of Jigawa, Katsina, Yobe, and Zamfara have been fully immunized. A separate household survey identified low knowledge about timing (vaccination calendars), misinformation, non-availability of vaccines in facilities, fear of side effects, providers’ negative attitudes, and spousal refusal to give permission as major barriers to demand and access to services. These factors were also raised during the focus
group discussions in Jigawa and Lagos. Although the data from the coverage survey do not appear to reflect sex disparities, the extremely low overall rates point to the need for concerted attention, in-depth data collection, and analysis at the state level. Some immunization program managers noted that the coverage data essentially reflect a small sample size or low “response rate” leading them to be concerned that potential inequities may remain hidden.

Overall, available survey results and the impressions of the stakeholders we included in our qualitative research suggest that sub-regional, sub-national, and even community-level data collection and analysis could provide important, actionable information on sex-disparities, particularly in areas where documented overall coverage is low. Participants in our survey and focus groups noted that sub-national data could be gathered through strengthening analysis of routine data, reanalysis of existing survey data, or conducting targeted surveys in areas likely to have sex disparities. Given the concerns that have been raised with the accuracy of routine and facility-based data, and the inherent challenges with collating information from disparate immunization campaigns, targeted surveys such as the one highlighted in India may offer the most valuable information.

Finally, the PATH/WHO Optimize project (among others) has highlighted that the effectiveness of current paper-based decentralized information systems to collect and track vaccination information is under pressure from a variety of factors, including migration, urbanization, and the increasing scope and complexity of immunization programs, as well as demand for accurate, timely data to support program planning, implementation, and monitoring. Optimize is engaged in efforts to widen use of computerized immunization registry forms as a way of strengthening surveillance, with initial work around the development of registries being conducted in Albania, Guatemala, and Vietnam. Optimize staff noted that such registries, and the potential use of PDAs, may be useful in the collation and reporting of accurate sex-disaggregated data.

Conclusions

Collection of sex-disaggregated data, especially at the point of service, does not appear to be a major barrier. Data related to the sex of the vaccinated are already being collected in twelve of the thirteen countries reflected in the survey responses, in-depth interviews, and focus group discussions. The gap is in the reporting and use of those data, with some immunizers questioning the value of collecting it as a “mere formality” if it is not used for policy development or strategic planning. Standardized, easy-to-use data capture forms and clear reporting protocols need to be introduced in areas where they are not being widely used to facilitate reporting of sex-disaggregated data, and data collection capacity must be strengthened.

The stakeholders who provided inputs to our analysis generally agreed on the value of and need to strengthen sex-disaggregated data at the sub-national or community level, in very specific, targeted countries that have low overall coverage rates or documented disparities. Front-line immunizers in Rajasthan state, India, and Jigawa state, Nigeria, believe there are sex disparities in coverage but do not necessarily have the evidence to prove or refute this belief.

Opinion on the utility of sex-disaggregated data is otherwise mixed. Some respondents suggested that the potential gain would be limited in areas where coverage is already high and not worth the additional resources that would be needed. One suggestion in lieu of emphasizing routine
surveillance data is to focus on analysis of existing survey data or to conduct targeted surveys in areas where there is reason to suspect sex disparities may exist.

Given the ultimate goal of improving overall coverage, priority attention needs to be paid to identifying and addressing gender dynamics that impact access to and demand for services. It is important to make the distinction between gender-related issues and observed sex disparities in coverage. Gender analysis of coverage does not focus on sex differentials, but rather on how, for example, norms around control over resources, household-level decision-making, women’s mobility, education level, socioeconomic status, and violence, as well as providers’ stigmatizing or prejudicial behaviors, may affect individual, family, and community-level immunization decisions. Related to this is the continuing need to incorporate qualitative data to complement the quantitative analysis being conducted, contextualize understanding of why sex differences exist and guide what kinds of interventions might be the most appropriate to pursue.

5 Hilber AM et al.
6 Unpublished analysis conducted by Dr. Juan José Amador, Director, Health Systems and Technology, PATH Nicaragua Country Program, for the purposes of this study.
10 Jones N, et al.
12 Jones N, et al.
13 Corsi D, Bassani DG, et al.
15 Corsi D, Bassani DG, et al.
16 Corsi D, Bassani DG, et al.