



Building Pediatric Societies' Capacity to Improve Immunization Systems:

A Spotlight on Indonesia and Nigeria

American Academy of Pediatrics

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Attribution

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Introduction

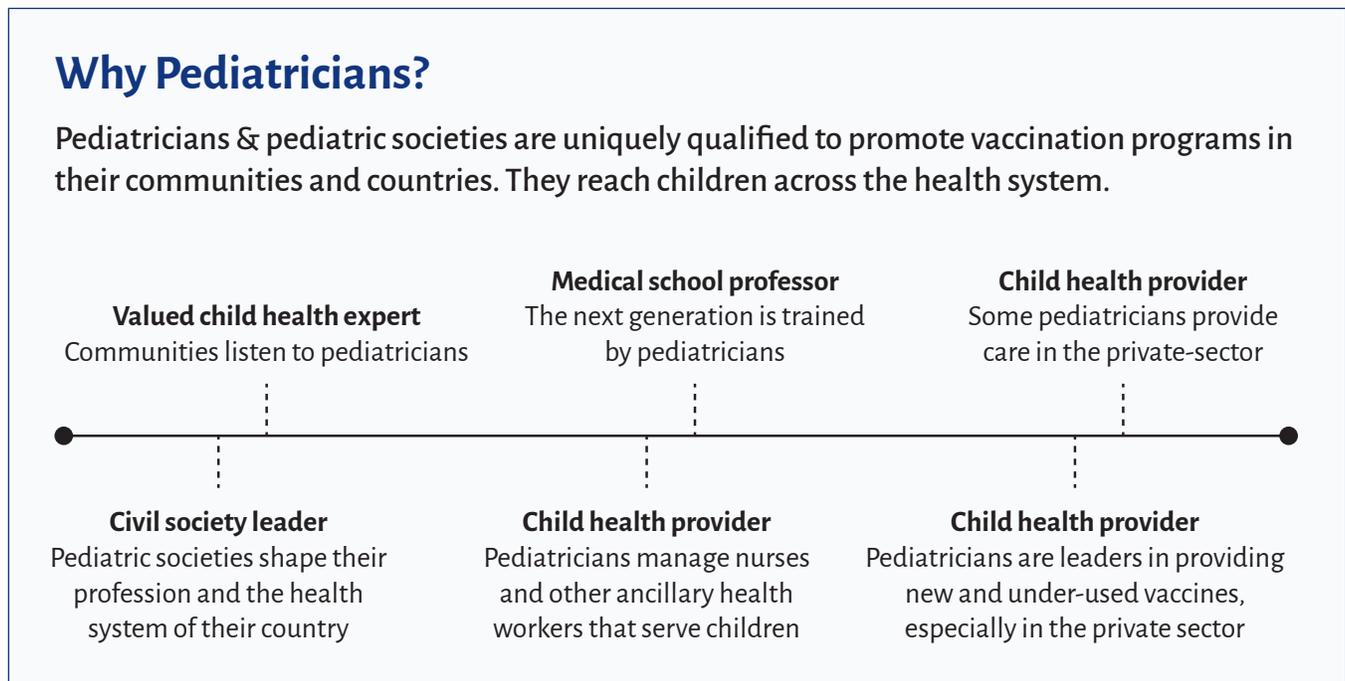
Improvements in child healthcare delivery on a global scale contributed to a 59% decline in the under-five mortality rate (from 91 deaths per 1,000 live births in 1990 to an estimated 39 in 2018) and reduced the infant mortality rate by nearly half.¹ However, there is still more work to be done. Although vaccines are one of the most successful and cost-effective health interventions in history, one in five children around the world—including 19.7 million children under the age of one year—do not have access to life-saving vaccines.² The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) established a global target for all countries to reach 90% of children under

the age of one nationwide and at least 80% in every district by 2020.³

While many global partners are engaged in immunization systems strengthening, the American Academy of Pediatrics (AAP) nurtures the unique role of pediatricians and national pediatric societies to influence immunization systems. Not only do pediatric societies hold numerous immunization system stakeholder positions, but they also serve as local experts in pediatrics and health service delivery (see Figure 1).

From 2016-2020, the AAP has partnered with the national pediatric societies of Bangladesh, Democratic

Figure 1. Why pediatricians are uniquely positioned to influence immunization systems



1 World Health Organization. Related Indicators. Child mortality and causes of death. Updated 2019. Accessed May 29, 2019. https://www.who.int/gho/child_health/mortality/mortality_under_five_text/en/

2 World Health Organization. Immunization Coverage. Updated May 15, 2019. Accessed June 01, 2019. <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>

3 Holipah, Maharani A, Kuroda Y. Determinants of immunization status among 12-to 23-month-old children in Indonesia (2008–2013): A multilevel analysis. BMC Public Health. 2018;18(1):288. doi:10.1186/s12889-018-5193-3

Republic of Congo, Indonesia, Ethiopia, Kenya, Nepal, Nigeria, Pakistan*, the Philippines, Tanzania, and Uganda with support from the US Centers for Disease Control and Prevention (CDC). The partnership utilizes a three-phased approach established in transforming clinical skills into advocacy skills, root problem identification, and organizational capacity building in each country (see Figure 2):

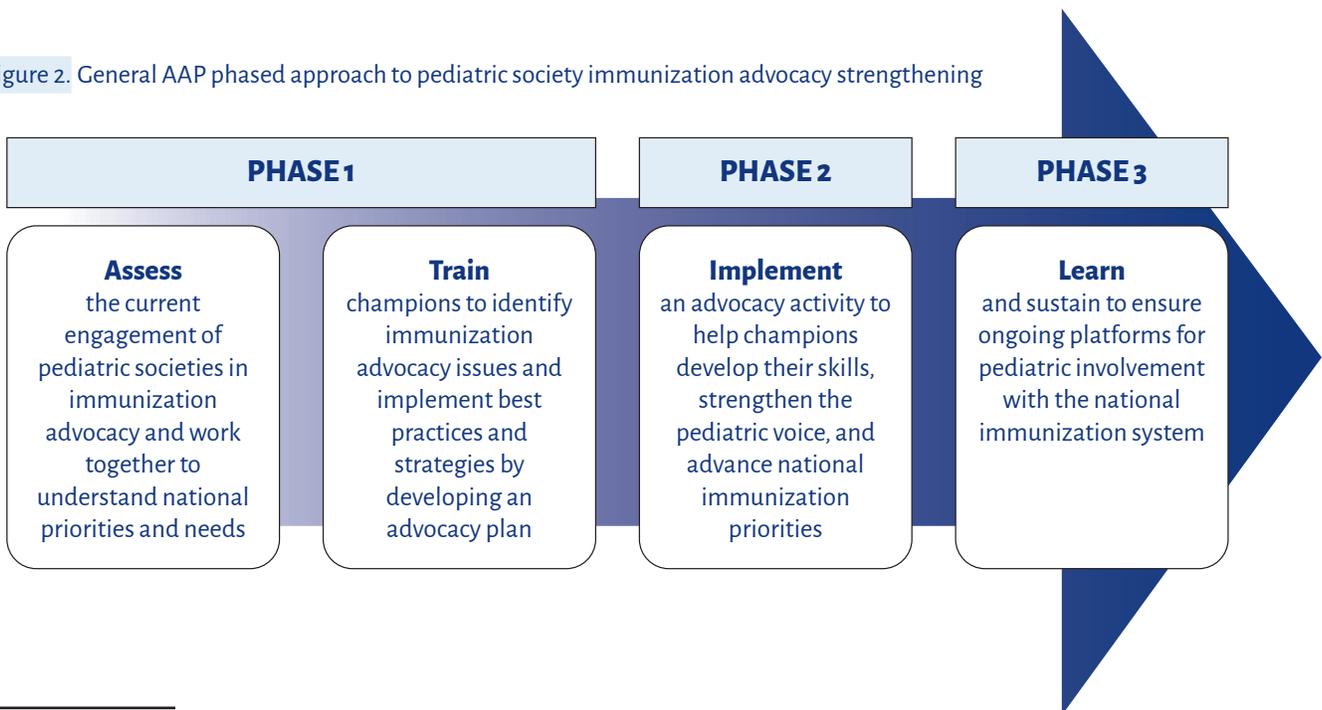
Phase 1 included the completion of a needs assessment to understand the current goals and organizational gaps of the society, as well as the possible gaps and needs at national and sub-national levels of the immunization program that could be filled by national pediatric societies. This needs assessment then informed the development of an immunization advocacy training curriculum to train 10-20 society ‘champions’ in developing and carrying out an immunization advocacy plan. A critical component of Phase 1 was the engagement of global and national stakeholders in both the needs assessment and workshop and the ‘twinning’ relationship between

AAP and the national pediatric society leadership.

Phase 2 focused on implementation of each national society’s immunization advocacy plan. This included a minimum of 12 months of targeted action that was closely monitored using a project monitoring and evaluation plan. AAP provided ongoing remote and in-person technical assistance to each society during this phase. Activities of each country varied greatly based on capacity of each society, national need and priorities, as well as the current status of immunization coverage.

Phase 3 focused on ensuring sustainability of society immunization activities and further strengthening organization capacity. Using human-centered design and root-cause analysis, AAP and partner societies developed a ‘gold-standard’ framework for pediatric societies to sustain immunization activities; additionally, each country developed their own plan in line with the framework.

Figure 2. General AAP phased approach to pediatric society immunization advocacy strengthening



* Denotes societies have only completed initial training of leadership and have not trained additional physicians

Global Impact

As a result of this partnership, immunization systems in 9 countries were strengthened through improved coordination across stakeholders and targeted advocacy communications to communities, immunization providers, and policymakers. In total, 200 pediatricians across 11 countries were trained in immunization advocacy who then ultimately

reached 3,500 health workers across all cadres of the immunization system, and over 2,500 community members, policy makers, and cultural leaders with stakeholder-specific immunization messages.

Specific achievements of each society include (see Table 1):

Table 1. Major achievements by pediatric societies

Implementing Pediatric Society	Major Achievements
Ethiopian Pediatric Society	<ul style="list-style-type: none"> • Developed Culturally appropriate job aids to improve immunization counseling and provider interaction in Afar & Gambella • Created immunology training course in coordination with MOH
Indonesia Pediatric Society	<ul style="list-style-type: none"> • Developed electronic information system to collect private sector immunization data and provided private data and reporting to the MOH for decision making • Bridged public-private sector divide by coordinating national level immunization campaigns and training general practitioners and midwives in immunization service delivery, management, and advocacy
Kenya Pediatric Association	<ul style="list-style-type: none"> • Developed cross-cadre training curriculum on cadre-specific roles in immunization service delivery that will reach 86% of immunization workforce • Piloted hospital-based course in 6 County Hospitals with an 80% improvement in immunization knowledge
Nepal Pediatric Society	<ul style="list-style-type: none"> • Trained 100 frontline vaccinators in AEFI detection/reporting, vaccine preventable disease counseling, and referrals in 6 out of 7 provinces • Published updated immunization guidelines (both publicly and privately available vaccines), including notes on national advocacy for society members
Pediatric Association of Nigeria	<ul style="list-style-type: none"> • Obtained written commitments for sub-national financing by six permanent secretaries and advocated for 1% increase for health care financing to support immunization services at the national level in Nigeria • Developed web-based advocacy training module to link national and sub-national members and priorities
Pediatric Association of Tanzania	<ul style="list-style-type: none"> • Trained 20 religious leaders, 20 media outlet leaders, and hosted 6 national televised media engagements to promote routine immunization • Trained 160 child health workers in immunization information and service delivery across 3 districts
Pediatric Society of the Democratic Republic of Congo	<ul style="list-style-type: none"> • Trained 20 members as immunization champions • Supported measles outbreak response through media and social media campaigns
Philippine Pediatric Society	<ul style="list-style-type: none"> • 100% of chapters provide ongoing immunization advocacy at sub-national level and have engaged more than 2,000 pediatricians • Developed immunology course to combat vaccine hesitancy and clinical misinformation following Dengvaxia vaccine introduction and crisis
Uganda Pediatric Society	<ul style="list-style-type: none"> • Trained over 100 private providers to improve quality of immunization service delivery in 2 districts selected by MOH • Launched national-level media campaign to RI and rota-virus vaccine introduction

What were our methods?

This case study served as an evaluation of the projects implemented in Indonesia and Nigeria. Qualitative and quantitative data from the following sources and stakeholders were collected:

1. In-country partner end of project reports
2. Web-based surveys of training participants and NPS leadership
3. In-person interviews and focus groups after project completion

Strengthening Private Sector Coordination in Indonesia: A Case Study

Indonesia is a complex country with more than 250 million people across over 6,000 inhabited islands, 4.8 million infants born annually, 6 acknowledged religions, and varying geography.⁴ Despite having introduced the WHO Expanded Program for Immunization (EPI) in 1977 Indonesia still struggles to meet global immunization coverage goals to protect the enormous cohort of children born every year from vaccine-preventable diseases. Since 2015, Indonesian immunization coverage has stalled at 85% nationally with only 77% of districts achieving greater than 80% coverage for three doses of diphtheria-tetanus-pertussis vaccine (DTP3).⁵

Indonesia launched the Jaminan Kesehatan Nasional (JKN) health care policy in 2014, which aimed to use private sector providers to achieve universal health

coverage. As a result, the private health sector has rapidly grown and now makes up 44% of hospital-based care and 52% of ambulatory care nationwide. Unfortunately, regulation of private health service delivery and coordination between the private and public sectors did not grow in proportion to ensure synchronicity, which has led to unreliable and disconnected information systems, inadequate monitoring of quality of care and pharmaceuticals, as well as fraudulent reimbursement claims by providers.⁶ These gaps were exposed in recent years when a scandal erupted over counterfeit vaccines administered to children in the private sector. The increased demand for private sector access to vaccines and no regulation or coordinated immunization supply chain resulted in a shortage in locally produced vaccines, which forced private hospitals and clinics to

4 Gavi The Vaccine Alliance. Indonesia. Geneva (Switzerland). Programmes and Impact Updated 2019. Accessed June 19, 2020. <https://www.gavi.org/country/indonesia/>

5 World Health Organization. 9 in 10 infants worldwide received vaccinations in 2017. Immunization, Vaccines and Biologicals. Updated July 16, 2018. Accessed June 20, 2019. https://www.who.int/immunization/newsroom/2018_infants_worldwide_vaccinations/en/

6 Chee C, Borowitz M, Barraclough A. Private sector health care in Indonesia. Bethesda (Maryland): Health Systems 20/20 project, Abt Associates Inc. Updated September 2009. Accessed July 2019. <https://www.hfgproject.org/wp-content/uploads/2015/02/Private-Sector-Health-Care-in-Indonesia.pdf>

import vaccines – later found to be counterfeit.

Because of JKN and the increase in market share of private sector providers, there became a clear need to engage private sector actors and improve public-private coordination to safeguard health service delivery and to meet national immunization goals. The Indonesian Pediatric Society (IPS) trained over 300 pediatricians on conducting immunization advocacy in their daily work settings, collecting data using the IPS-PEDIATRIC Online Immunization Reporting System (I-POINTS) platform, and using service delivery data in advocacy. To support these trainings, IPS developed immunization advocacy and reporting handbooks, as well as a video tutorial explaining how to record and report immunization services using the I-POINTS platform, ensuring dissemination of I-POINTS to an increased number of members. In order to further strengthen coordination between sectors, this also included the training of “fresh graduate” pediatricians who were to be deployed to rural health facilities for one year



as required by JKN. Additionally, over 100 general practitioners (GPs) and midwives were trained in immunization advocacy through collaboration with the Indonesia Medical Association and the Indonesia Midwives Association since these private practitioners also deliver care to infants and children through JKN but receive little training on the importance of vaccines or training support from the Ministry of Health (MOH).

Strengthening Decentralized Policy and Available Services in Nigeria: A Case Study

Nigeria, with a population of over 190 million, is made up of six geo-political zones comprised of 36 states, 774 local government areas (LGAs), and the federal capital territory of Abuja. The country operates a decentralized federal governing system (politically and fiscally), with each state as a federating unit

headed by a governor. The states are then divided into LGAs, with each LGA governed by an elected Chairperson and a legislative council.⁷

The public health services in Nigeria are organized into a three-tier structure with primary, secondary, and tertiary levels divided among its decentralized

⁷ World Health Organization- Africa. Neglected Tropical Diseases. Nigeria multi-Year Master Plan. (2015-2020). Updated February 2015. Accessed June 2019. http://espen.afro.who.int/system/files/content/resources/NIGERIA_NTD_Master_Plan_2015_2020.pdf

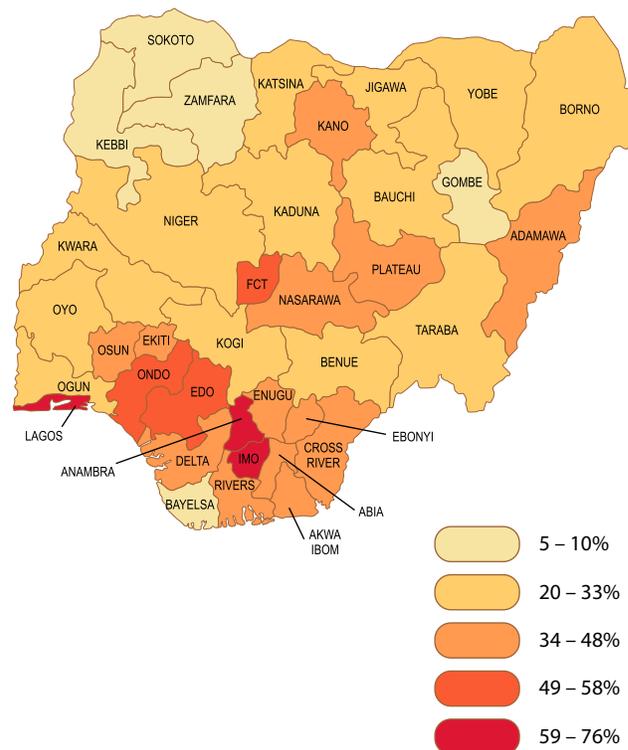
governing structure. The federal government is responsible for the procurement of vaccines and the development of immunization guidelines. Similar to many decentralized systems, public health systems within states and LGAs and private sector practitioners are responsible for developing implementation infrastructure to deliver routine immunization services.

Nationally immunization coverage stands at 58% with only 75% of districts achieving greater than 80% DTP3 coverage as of 2018.⁸ According to the 2018 Nigeria Demographic and Health Survey, vaccination coverage among children age 12-23 months ranged widely with the highest rates in Anambra state (76%) and the lowest rates in Sokoto (5%) (see Figure 3).⁹ A weak primary health care system; vaccine hesitancy; insurgency and insecurity; poor quality of data; and lack of accountability, finances, and political will at the sub-national level continue to influence immunization coverage.¹⁰ The Nigeria EPI program still has significant areas of growth to achieve in order to reach the WHO and UNICEF target of immunizing 90% of children under the age of one nationwide and at least 80% in every one of Nigeria’s 774 districts.¹¹

The Paediatric Association of Nigeria (PAN) trained and equipped 24 pediatricians across the six geopolitical zones with immunization advocacy skills. The trained zonal immunization champions tailored advocacy activities to specific challenges in their territories and engaged other sub-national PAN members to support local advocacy plans. Zonal champions held advocacy visits with health policymakers at state and local government levels and providers health centers regarding the importance of budget allocation for immunization human resources,

routine immunization services, and polio eradication in all six regional zones (one state per zone – Nasarawa, Enugu, Rivers, Yobe, Ekiti, and Kebbi). Additionally, to address demand-side issues, townhall meetings to discuss immunization safety, vaccine misconceptions, and the importance of routine immunization with caregivers, traditional community and religious leaders were also held.

Figure 3. Nigeria Vaccination Coverage by State: Percentage of children age 12 - 23 months who received who received all basic vaccines at any time before the survey⁹



8 Gavi, the Vaccine Alliance. Gavi country factsheet: Nigeria. Updated 2019. Accessed October 04, 2019. <https://www.gavi.org/country/nigeria/>

9 National Population Commission (NPC) [Nigeria] and ICF. 2019. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF. Updated October 2019 <https://www.dhsprogram.com/pubs/pdf/FR359/FR359.pdf>

10 American Academy of Pediatrics. Pediatric Association of Nigeria. AAP-CDC Project Site Visit Information Gathering Tool. Updated February 11, 2019. Unpublished.

11 World Health Organization. Global Vaccine Action Plan 2011-2020. Updated February 21, 2013. Accessed Sep 18, 2019. https://www.who.int/immunization/global_vaccine_action_plan

Impact on National Immunization Program

In both Indonesia and Nigeria national pediatric society engagement resulted in improved immunization system outcomes. Specifically, in Indonesia, improvements were seen in coordination across sectors, service delivery and vaccine coverage, and organizational commitment to immunization advocacy. PAN's efforts have resulted in improvements in caregiver knowledge, service delivery, and organizational commitment to immunization advocacy.

Increased coordination across public and private sectors

Through partnership with MOH and other national public and private stakeholders, IPS was able to successfully improve private sector data collection and align public-private messaging to the community. The creation and implementation of I-POINTS across the pediatric private sector – IPS-trained pediatricians, GPs, and midwives – resulted in 25% of private pediatricians reporting immunization services to date, with ongoing plans to continue to scale-up.¹² IPS, the National Immunization Technical Advisory Group (NITAG) and the MOH are continuing to work together to both determine the best way to utilize the data collected and to link the platform with MOH's immunization reporting system, which is being developed.

In addition to supporting data coordination, IPS leveraged its relationships with other immunization providers to harmonize communications around vaccines. Through the advocacy skills training, IPS ensured that pediatricians, GPs, and midwives across

the country understood how to align their patient communications with public sector messaging. This has increased comfort and self-efficacy across these cadres in discussing vaccines with patients and families. Leadership in public-private message alignment took center stage during the 2018 public sector Measles-Rubella Supplemental Immunization Activity (MR SIA). IPS worked with society members at the district-level to ensure both public and private sector providers were sharing the same messages about the safety and benefits of vaccines. Data collected through project evaluation indicates that in districts with a strong IPS presence, the uptake of MR vaccine during the campaigns was higher.

Improved immunization service experience:

IPS' engagement resulted in improvements in both access to immunization services and uptake of vaccines. Advocacy at the national level by IPS led to the addition of MR vaccine into the package of basic vaccines offered through the national immunization program in 2019. Prior to this, MR was only available through national campaigns and the private sector.¹² Another example of how IPS has worked to improve access to immunization services is through individual members translating patient-centered immunization advocacy in their practice settings. In several private hospitals in Jakarta, IPS members worked with their hospital administration to increase access to immunizations by developing dedicated immunization clinics offering all EPI vaccines (modeling public sector services) and providing vaccines to newborns in the labor and delivery ward

¹² Tan, T. Q., Gunardi, H., Smith, S., Goentoro, P. L., Foehringer Merchant, H., Carter, T., ... & Pulungan, A. (2020). Global immunization systems strengthening through pediatric societies: the promise of private-public partnerships in Indonesia. *Human Vaccines & Immunotherapeutics*, 16(5), 1194-1201

rather than only at their first pediatric visit.¹²

Additionally, the model of using the expertise of pediatricians to support public-sector EPI managers and frontline immunizers proved to be effective in improving population-level immunization coverage. IPS' "fresh graduate" program was particularly impactful in rural areas. In Way Kanan Regency – an area in Lampung Province, Sumatra – DTP3 coverage increased from 65% to 100% during the 12-month project.¹² The district EPI attributes this improvement to educating a variety of stakeholder groups on the importance of immunization and supporting frontline immunizers to improve quality of services via improved patient communication and recordkeeping.

Similarly, PAN's engagement influenced needed improvements in immunization service delivery. Through continued support to public sector, PAN Champions identified gaps in sub-national policy implementation and raised these issues to district and LGA policy makers. In Nasarawa State, cold chain storage was a significant barrier to safe and effective service delivery. PAN successfully advocated for the prioritization of cold chain storage to sub-national policy makers, leading to the delivery of 45 solar panel-powered fridges. Additionally, PAN champions in all geopolitical zones advocated for the existence of or increased number of mandated vaccination days to improve access to immunization within health facility catchment areas. For some facilities, like one in Nasarawa State, this resulted in adopting a mandate to vaccinate every day and for other areas, such as a facility in Enugu State, to increase immunizations days from one to three days per week.

To further support community-centred services, PAN's immunization champions held townhalls with over 2,000 caregivers, traditional community and religious leaders, and frontline health providers across the 6 geopolitical zones to discuss immunization

safety, address vaccine misconceptions and cultural/religious barriers, and to stress the importance of routine immunization for the safety and wellbeing of their children. Staff at local health facilities have reported reduction in vaccine refusals due to cultural or religious barriers. Additionally, PAN established a reporting system for caregivers to report health facilities mandating fees for immunizations, which should be free under the national immunization program. This system aimed to reduce corruption at local health facilities as well as to empower caregivers to demand services that should be available to them. In Enugu State, local policymakers noted that vaccine hesitancy is on the downward trend due to increased community awareness of benefits of immunization as a result of these campaigns.

Strengthened institutional capacity for advocacy and immunization systems support:

In Indonesia, IPS trained over 400 pediatricians – about 10% of their members – and developed several training curricula to support immunization clinical and advocacy skills topics including basic vaccinology, vaccine advocacy and communications, and data reporting. This has resulted in a majority of those trained (71%) feeling both confident in their skills as advocates, as well as, engaged and supported by IPS in their advocacy activities. Moreover, through the technical assistance and partnership engagement across the private and public sectors, IPS has established itself as a key partner in Indonesia's immunization program. This has been evident in IPS' role in the 2018 MR SIA and the MOH naming the IPS president as the most pre-eminent person in the immunization program in 2018.

Similarly, PAN established an institutional structure to support ongoing immunization advocacy and strengthen multi-sector and multi-level response to immunization advocacy. They trained 15 members

from six geo-political zones to serve as zonal immunization advocacy champions and nine PAN executive members to lead regional advocacy coordination, provide ongoing support to champions, and to advocate at the national level. While PAN is historically a centralized organization, this new system for coordination across central and regional needs is allowing PAN to have a more expansive reach. Additionally, through PAN's impact at the local level and regular meetings with national government officials and legislators, PAN has gained a reputation as a trusted expert in child health matters. This has been evident in PAN's current role as the lead monitoring body for the National Measles Vaccination Campaign, in partnership with National Primary Health Care Development Agency (NPHCDA) and other relevant agencies. Additionally, two PAN members were recently nominated as Immunization



Monitors to provide technical and consultancy support on immunization and other child health services at the sub-national level to both the Federal Ministry of Health and the NPHCDA.

Lessons Learned for Engaging National Pediatric Societies in Immunization Systems Improvement

Pediatricians and pediatric societies can address gaps in immunization systems left unaddressed by traditional partners, but their engagement must be done in close collaboration with ministries of health, bilateral organizations, and other non-traditional stakeholders across the health system.

Pediatricians and pediatric societies are uniquely qualified to promote vaccination programs in their communities and countries. They often have many

points of contact with children across the health system and the varying roles they occupy in those settings allow them to be both knowledgeable and influential. When this knowledge and influence is activated in collaboration with ministries of health, bilateral organizations and non-traditional stakeholders, improvements to the immunization system can be accomplished. This is evident in the improvements made in both Indonesia and Nigeria led by each country's pediatric society. For example, as non-governmental advocates working across

public and private sectors, pediatricians were able to advocate to lawmakers for increased immunization budget (Nigeria) and coordinated reporting of private sector immunization data with the Ministry of Health (Indonesia). Both of these examples are hugely impactful to the long-term success of the country's immunization program yet have been difficult to accomplish by traditional global partners due to large bureaucracies, funding gaps, and a myriad of other reasons. As trusted community leaders, pediatric societies are able to capitalize on the respect they hold within their countries and governments to efficiently advocate for real-time needs of children and communities. Ultimately, national pediatric societies may be particularly impactful when working to identify non-traditional solutions to improving immunization systems.

Continuous and persistent advocacy at the government and community levels is necessary to both establish and sustain improvements in the immunization system.

In both Indonesia and Nigeria, engagement at national and sub-national government levels was critical to seeing improvements in decision maker commitment as well as vaccine coverage. Due to bureaucratic turnover, establishing long-term relationships with key stakeholders may be difficult but critical to prioritization and policy changes. Engagement not only includes persistent advocacy visits to nurture those connections, but also establishing coordinated and complimentary advocacy messages. For instance, as part of the IPS advocacy training, pediatricians developed immunization-related communications that supported public sector messaging. IPS was then granted a leadership role in the 2018 public sector MR SIA campaign by the government and engaged chapters in each district to coordinate messages between the public and private sector. Additionally, in Nigeria, a key component of

the successful advocacy to increase the national immunization budget included PAN's ability to use their expertise and authority as child-focused medical doctors to represent the needs of frontline vaccinators, particularly around gaps in payment and difficult working conditions. While advocacy for immunization system improvements is not unique to pediatricians or pediatric societies, policymakers' and community members' inherent respect of pediatricians as experts in child health allows societies to continuously maintain advocacy efforts at both the government and community levels and act as an intermediary between all levels of the health system.

Advocacy strategies must be tailored and adaptable to the varying needs across each country's regional diversity to ensure engagement and buy-in from local community members, religious leaders, and government officials and outreach is often essential to improved service delivery and vaccine demand:

Like many countries, the needs, concerns, and accessibility of the immunization system varies across the different regions of Indonesia and Nigeria. Advocacy messages and engagement need to be able to address the sub-national, region-specific experiences of health care workers, community members, and government officials as efforts are made to increase vaccine demand and improve the system as a whole. Rural areas tend to have particularly poor immunization coverage for a variety of reasons including vaccine supply and access to trained immunizers. The decentralized structures of IPS and PAN ensure that local members are in touch with the local needs, concerns, and accessibility of the immunization system in their service area. Both societies have been able to adapt advocacy messages into dynamic, actionable changes in patient experience and health facility functions in regions across the country. For example, in Nigeria,

vaccine resistance within the Hausa community was addressed through the creation of ward health committee partnerships between healthcare staff and community leaders, while raising awareness of free vaccination services by posting signs to inform caregivers proved successful in a different state. Furthermore, by training “fresh graduate” pediatricians before their one-year mandatory deployment, IPS was able to actively address gaps in knowledge by providing mentorship and on-the-job training to immunizers and immunization

program managers, quickly increasing the number of trained immunizers in rural areas that are often geographically hard to reach. Using their own experience as providers and community leaders, national pediatric society leaders are able to convene stakeholders at all levels of the immunization system. By engaging with health workers, pediatric leaders can develop unique advocacy strategies and opportunities to improve quality of services specific to their locale that led to supportive policy at the national and sub-national level.

Conclusion

Supporting the strengths of national pediatric societies, such as IPS and PAN, empowers individual members and other child health providers to gain the skills needed to strategically advocate for improvements in their local immunization systems. Supporting national pediatric society partnerships can have a direct impact on immunization systems. As child health experts, civil society leaders, educators, hospital supervisors, and child health providers, pediatricians across the public and private

sector can play a unique role in helping countries reach global immunization targets and strengthen the potential to sustain those improvements. A tailored, adaptable advocacy strategy and collaboration between diverse sets of stakeholders—including pediatricians, ministries of health, and religious/community leaders—are paramount to the significant improvement of immunization coverage and thereby infant and child health in the country.

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