

Engagement of private/nongovernmental health providers in immunization service delivery

Considerations for National
Immunization Programmes



WHO Guidance Note



**Engagement of
private/nongovernmental
health providers
in immunization service delivery**

Considerations for National
Immunization Programmes

WHO Guidance Note



This document was developed and published by the Department of Immunization, Vaccines and Biologicals (IVB). An initial version of the document developed with input from a number of experts was presented and discussed at the April 2017 meeting of the Strategic Advisory Group of Experts on Immunization (SAGE). The document was then adjusted following SAGE's recommendations and with input from peer-review. With special thanks to Nikki Turner and Margie Watkins for their help with the development and the finalization of the document.

Ordering code: WHO/IVB/17.15

Published in September 2017

This publication is available on the Internet at:
www.who.int/immunization/documents/en/

Copies of this document as well as additional materials on immunization, vaccines and biologicals may be requested from:

World Health Organization
Department of Immunization, Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• Email: vaccines@who.int •

© World Health Organization 2017

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 license (CC BY SA-4.0; <https://creativecommons.org/licenses/by-nc-sa/4.0/>).

Under the terms of this license, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons license. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the license shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Engagement of private/nongovernmental health providers in immunization service delivery: Considerations for National Immunization Programmes. Geneva, Switzerland: World Health Organization; 2017. License: CC BY SA-4.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages.

Table of Contents

Executive summary	i
1. Introduction and aims	1
2. Definitions and background	3
3. Considerations concerning the engagement of the private sector in national immunization programmes	6
3.1 Contribution to vaccination service delivery and coverage	6
3.2 Vaccination practices, service quality, missed opportunities, and procurement	7
3.3 Vaccination schedules	9
3.5 Collaborative dialogue and formal agreements	12
3.6 Advocacy	13
3.7 Programme monitoring, coverage reporting and disease and adverse event surveillance	14
3.8 Private providers' role in policy and decision-making	15
4. Recommendations concerning the engagement of the private sector in national immunization programmes	17
5. References	22

Executive summary

→ Nongovernmental private vaccination providers come from a diverse range of sectors that include both for-profit and not-for-profit civil society organizations (CSOs), nongovernmental organizations (NGOs) and faith-based organizations (FBOs), and have varying roles in the delivery of vaccination by national immunization programmes (NIPs), and in the provision of other immunization-related services, e.g. health education, advocacy, awareness raising, demand creation, resource mobilization, and vaccine-preventable disease surveillance.

→ Regardless of whether the government sector proactively engages with the nongovernmental sector, it is likely that nongovernmental organizations and providers are already playing a role in immunization services in most, if not all, countries.

→ Many NIPs have longstanding existing arrangements with nongovernmental (particularly not-for-profit) providers to provide vaccination services; such arrangements facilitate collaboration between government and nongovernmental sectors.

→ Information exchange between government and nongovernmental sectors, particularly for-profit providers, is weak in many countries.

→ In many countries, particularly those with fragile health systems, the nongovernmental (particularly for-profit) sector is not well integrated in the reporting of vaccine doses administered; consequently it is difficult to estimate the nongovernmental contribution to vaccination coverage.

→ In low and middle income countries (LMICs) and in some high income countries (HICs), mechanisms to enforce quality standards for vaccine storage and administration, and reporting of adverse events following immunization (AEFI) are limited in the nongovernmental sector, due to human and financial resource constraints and limited competencies.

→ A universal standard approach to engaging the nongovernmental sector is neither realistic nor appropriate, given the varying situations in individual countries.

Overall recommendation: National immunization programmes should optimize collaboration and communication with nongovernmental providers regardless of the relative contribution of nongovernmental providers to the delivery of vaccination.

Specific recommendations are provided with respect to activities to:

1. Assess nongovernmental providers' contribution in immunization service delivery
2. Determine the optimal model of public private engagement and optimization of service delivery
3. Facilitate dialogue and establish agreements and contracts for collaborative activities, including for decision-making
4. Ensure adequate data management and reporting
5. Provide adequate training and capacity building
6. Facilitate accountability and performance oversight

1. Introduction and aims

Vaccination is a core component of the human right to health, preventing communicable disease at the individual and population levels. In 2012, the World Health Assembly adopted the Global Vaccine Action Plan (GVAP) with the goal of providing equitable access to vaccines by 2020 (1). The GVAP sets ambitious targets that may only be attainable through shared responsibility and partnerships of the various groups involved in providing health care. The GVAP recommendations to achieve its strategic objectives include “Ensure coordination between the public and private sectors for new vaccine introduction, reporting of vaccine-preventable diseases and administration of vaccines, and ensure quality of vaccination in the public and private sectors”. Furthermore, the global routine immunization strategies and practice (GRISP) (2), a companion document to the GVAP, recommends activities to *Enable and harmonize routine immunization services provided by the private and nongovernmental sector*. In April 2016, the WHO Strategic Advisory Group of Experts (SAGE) on immunization stressed that the implementation of immunization in the context of health system strengthening and Universal Health Coverage¹ requires increased coordination between the public and the nongovernmental (private) sectors (3).

Successful implementation and reaching the goals of the GVAP, including necessary improvements in vaccine coverage rates at all levels, require optimization of the interaction between public and private (for-profit and not-for-profit) health-care sectors. The challenge for NIPs is to achieve high vaccination coverage and reduce equity gaps, often in resource-constrained settings. Engagement with nongovernmental (private) providers to achieve optimal vaccination services has the potential to help improve programme performance and increase coverage, but only if their respective roles are clearly defined and the services are compatible with the existing national health system and standards (4,5). In countries with both public and private immunization delivery, there is often variation in coverage and accessibility to service providers. The variation can be geographic and/or related to socioeconomic and/or insurance status (4,5). Because each country functions differently,

¹ Universal health coverage includes financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

and has a myriad of characteristics that make it unique, a single standard approach to engaging the private sector is not appropriate. The role of the private sector (contribution to coverage, service quality, disease and AEFI surveillance), and its engagement with NIPs varies within and between countries and remains poorly understood (4,5,6).

This guidance note for National Immunization Programmes aims to:

1. Present considerations regarding the involvement of nongovernmental (private) providers in vaccine delivery (including contribution to enhancing coverage and equity while maintaining delivery standards and quality), monitoring of coverage and safety, and disease surveillance;
2. Provide recommendations to support optimal engagement of nongovernmental (private) providers in the effective delivery of national immunization programmes.

This document does not attempt to quantify the impact of the private sector or propose a preferred hierarchy of delivery systems (i.e. private, mixed, or public model). Nor does it prescribe the type of engagement or advocate for a greater or lesser role of the private sector in health care. The aim is to encourage closer collaboration between the public and private/nongovernmental sectors and hence a more effective engagement of the private sector in supporting NIP priorities.

2. Definitions and background

A broad definition describes the private sector as, “comprising all health-care providers who exist outside the public sector, whether their aim is for philanthropic or commercial purposes” (7,8). However, there is a need to further differentiate the provision and the financing of health services outside the public sector as there can be considerable overlap and variation (5,8). In some cases, care can be funded by the public sector through a national health-care system, but with care provided by the private sector. There are also systems that are funded by private insurance, but with care provided by public providers. Additionally, a system can be dependent on a mixed scheme of public and private funding with service delivery by public and private providers, as typically seen in most LMICs (5).

This document considers the provision of vaccination and other health services by any entity outside the government. This encompasses full- or part-time private practitioners (e.g. physicians, nurses, pharmacists), private for-profit and not-for profit primary care organizations and hospitals, CSOs, NGOs, FBOs, community-based organizations (CBOs), and private companies such as mining or other large industries that provide internal medical services for their employees and their families (5). CSOs, NGOs and FBOs often play several roles in NIPs, e.g. education, advocacy, awareness raising and demand creation, resource mobilization, vaccine-preventable disease surveillance, provision of immunization services (9,10). In this document all nongovernmental providers are termed “private providers”. Not included in the scope of this document are the private vaccine production and vaccine delivery technology manufacturing companies, and private practitioners in the informal sector (e.g. traditional healers and informal drug retailers²).

Private sector engagement (PSE) can be defined as the deliberate, systematic collaboration of the government and the private sector to move national health priorities forward, beyond individual interventions and programmes (11). The process of PSE has been described for vaccine supply chains, and engagement guidance documents specific to that

² Although the informal sector may not be relevant in the context of immunization service delivery, it is important to note that in some settings it may be a key participant in surveillance systems for certain vaccine-preventable diseases.

process have been developed (11,12), but guidance on other aspects of immunization service delivery has not been developed.

In all countries private sector health services exist and government engagement with the private sector is underway, to variable degrees. A variety of models have been adopted to deliver immunization services involving public and private providers. In some countries, FBO-managed or NGO-managed hospitals are integrated and in some cases almost indistinguishable from public sector hospitals (9). In the majority of LMICs, publicly funded immunization services are mainly provided by public providers, but in many countries private providers also contribute to the delivery of these services (5). Private providers who provide immunization services can work full-time in the private sector or work part-time in both private and government sectors. Private providers may also provide services in school and occupational health settings (13). Many HICs rely mainly on private providers for immunization delivery, with established health insurance schemes. Increasingly, LMICs are also using the private sector to deliver core health-care services funded by Universal Health Coverage programmes (5,6).

PSE has been shown to add value in the health system at various levels, including increased access to skills and expertise, operational efficiencies, increased innovation, shared risk, and allowing the government to focus on its core competencies (9). PSE is particularly important in LMICs, where government resources may lack the capacity to achieve national health and vaccination goals, or in areas of civil strife where it may be difficult for the government to function (9). More effective engagement between the public and private health-care sectors in terms of better policies, regulations, information sharing, and financing mechanisms, could improve the performance of health systems (13). If the private sector already provides a significant proportion of vaccinations, engagement could focus on service quality issues. If private sector providers do not contribute a significant proportion of vaccinations, a potential role for them to expand the reach of the public sector could be considered.

While in some countries the involvement of the private sector is limited to only a small portion of the population such as the wealthy, expatriates, and employees of large

corporations, or to urban settings, in other countries there is an increasing share of health delivery occurring in the private sector (4,5). The private sector is sometimes perceived as serving only the wealthy, but this is not strictly true. Private sector providers, including FBOs and NGOs, and for-profit providers, often provide services to poor and rural underserved populations (5).

3. Considerations concerning the engagement of the private sector in national immunization programmes

There are several considerations related to private providers involved in vaccine delivery. Only limited information exists for several of these considerations, and is summarized below.

3.1 Contribution to vaccination service delivery and coverage

Standardized country-specific information about the *share of overall health expenditures* in the private sector shows that the private sector has a significant role in health-care delivery internationally. For example in 2014, the proportion of private sector share of total expenditure on health care exceeded 20% in 82% of 192 countries globally and exceeded 50% in 30% of countries³, with large variation by WHO region and country income status. However, overall expenditures include those for curative care, which outweigh preventive care expenditures. Participation of the private sector in *preventive services* (most commonly vaccination and prenatal care) is usually more limited. For example, in Africa, private sector participation in preventive services was 45% in Nigeria, 30% in Uganda, but less than 20% elsewhere (14). FBOs and NGOs are the main providers of private preventive care, often in partnership with the public sector (14).

Currently available data do not allow for a comprehensive quantification of the contribution of private providers to immunization service delivery. Limited information about the private sector role in immunization delivery may exist in most countries, but may be available from administrative data (if private providers receive vaccine from the government), coverage surveys, facility surveys (e.g. service provision assessments) or specific studies. The location of vaccination delivery (private vs public sector) is not captured in demographic health surveys (DHS). Service provision assessment (SPA) health facility surveys include both public and private facilities, enabling some comparison of vaccination service delivery characteristics by public and private ownership categories (15). However,

³ Analysis using Global Health Observatory data, available at <http://www.who.int/gho>

vaccination coverage is not included, and SPAs have only been carried out in a limited number of countries. Thus the private sector contribution to vaccination service delivery is variable and remains largely unknown, with its quantification limited to a small number of studies (4-5).

Generally, the proportion of private for-profit facilities offering vaccination is lower than the proportion of private not-for-profit facilities (15). The proportion of vaccines provided by the private sector also varies widely. The limited number of studies that compared vaccination coverage between private and public sectors used different methodologies and found both lower, higher or no difference in coverage (5). In many LMICs private sector organizations, typically not-for-profit, have had longstanding arrangements with NIPs to provide vaccination services. Specific arrangements relative to technical and financial support vary. For example, the government of Afghanistan contracts out the bulk of health service provision, including immunization, to CSOs (10). CSO leadership has been credited as playing a key role in improving immunization coverage despite the unstable conflict setting (10). In a different type of arrangement, in some countries vaccines are procured by the Ministry of Health (MOH) and then distributed to private providers (5); this has the advantages of increased control and standardization of vaccination messaging. In these arrangements providers report on the number of vaccine doses given, or participate in national immunization registries (4). However, there is little available information on successful examples of public-private agreements in LMICs (14).

3.2 Vaccination practices, service quality, missed opportunities, and procurement

A review published in 2011 found that the few studies (in Cambodia, Mauritania and Malaysia) which addressed quality of vaccination service delivery by private providers in LMICs generally found suboptimal vaccination practices and related knowledge levels among private sector providers (4). More recent studies that addressed these issues are limited in number, but likewise identified deficiencies in service quality. However systematic assessments to compare vaccination practices among private and public sectors over a large number of countries are lacking. Service quality shortcomings most commonly identified

include temperature chain management, vaccination schedules, and waste management (4,5). A recent study of the knowledge, attitudes, and practices of private immunization providers (paediatricians and general practitioners) in urban settings in Gujarat, India, identified several practices with safety and quality concerns and practices potentially leading to missed opportunities for vaccination. Cold-chain quality varied greatly: almost all of the private providers stored vaccines in domestic refrigerators and some stored vaccine vials in unrefrigerated thermal boxes. Expired vaccine vial monitors were noted in 18% of observed refrigerators. Vaccine schedules were not strictly followed by 45% of the participants, and 60% responded that they did not administer more than two injections in the same visit (15).

An acknowledged limitation of existing studies is that few compare immunization practices in private and government facilities. In one recent study in Africa using surveys in representative samples of 3219 health facilities in four countries (Kenya, Malawi, Senegal, Tanzania), barriers to vaccination and missed opportunities were found in both private and public health facilities (16). A smaller proportion of for-profit facilities offered child vaccination services (country range, 25–37%) than the public facilities (range, 90–96%). Less than a third of for-profit facilities offered measles vaccination daily. A minority of both private and public providers assessed the child’s vaccination status during a sick child visit (range by country and facility type, 14–44%), or offered tetanus toxoid during antenatal visits (range, 19–51%). Among for-profit providers, 18–32% (range across countries) assessed the child’s vaccination status during a sick child visit.

The proportion of the population seeking curative services may far exceed the proportion seeking immunization. When private providers offer curative services but not vaccination, the rate of missed opportunities increases. This is an area that could be systematically addressed in countries with high drop-out rates and missed opportunities for vaccination.

Private providers can use a variety of mechanisms to procure vaccines and injection supplies through government channels or private suppliers and distributors. In some countries vaccines are procured by the MOH and then distributed to private providers for deployment (5).

Enhancing professional knowledge and skills of providers through training and competency examinations ensures accurate knowledge transfer and directly supports the success of immunization programmes, particularly the quality and monitoring of the vaccination programme, and disease surveillance. Conducting supportive supervision or instructive field visits, sharing best vaccination practice, and performance reviews are also important to ensure the quality of the programme. When providers have up-to-date information on changes in immunization theory, practice, and policy, they can vaccinate safely and within their scope of practice (4).

Regulations can require health professionals to attend continuing medical education as a condition for renewal of their license to practice (9). To be able to enforce regulation, governments must have a registry of practitioners and their place of work (9). In many cases, professional self-regulation or third-party accreditation can relieve government of the burden of standards and enforcement (9). Training accreditation and regulation does not have to be carried out by the government (9). For example, in the Dominican Republic, INSALUD, a coordinating organization for more than 100 NGOs, participates in a National Commission for NGO Qualification and Accreditation, ensuring that NGOs receiving public funding are in compliance with requirements, standards and norms (9).

In many LMICs, mechanisms to enforce quality standards for vaccine storage and administration are absent due to limited human and financial resources (4, 6).

There is a need to unify standards between the public and private sectors and for private providers to be routinely trained on immunization-related topics, in order to ensure uniform standards across sectors.

3.3 Vaccination schedules

Private providers' choice of routine vaccines and administration schedules should follow those stipulated in their country's national vaccination schedule. However, private providers administering vaccines outside of a contractual agreement may choose to offer

different vaccines or propose new ones that have yet to be introduced by the MOH, based on a variety of factors including cost, supply, and client demand (5).

Private providers are often targeted by vaccine manufacturer marketing campaigns for new vaccines. New vaccine introduction in the private sector can put pressure on the public sector to introduce these vaccines into the NIP (5). Besides being incentivized by vaccine manufacturers to offer new vaccines, private providers may also feel market pressures to meet the client requests, e.g. for new vaccines or alternate schedules. While some countries have started to penalize public physicians who deviate from the recommended national schedule, this type of control can be difficult to extend to the private sector and its impact has yet to be documented (5). It should also be kept in mind that public and private providers may have different priorities, e.g. the public sector may choose a schedule that optimizes the public health impact of vaccination, whereas a private sector provider may choose a schedule that optimizes the protection of the individual patient. For example, in India the private sector for years provided 5 doses of OPV in infancy as part of routine immunization to optimize individual protection, while the public sector maintained a 3-dose schedule.

Modifications of vaccination schedules and use of different vaccines in the private and public sectors may create epidemiological gaps which can lead to increased risks of vaccine-preventable diseases in populations not covered by the private sector (17). For example, the use of rubella-containing vaccines in a subset of the population without achieving high population immunity in the whole population has the potential to shift the overall risk of disease to older ages, including women of child-bearing age, incurring increased risk of congenital rubella syndrome among children of unprotected women. There is also a risk that different vaccination schedules used by different providers may generate confusion, questioning and lack of trust by the population. Accurate estimation of coverage is complicated if different schedules are used for the same vaccine.

Harmonization of schedules between sectors minimizes epidemiological gaps and risks and supports equity of services between sectors as well as the credibility of the NIP.

3.4 Equity of services

Ensuring equitable access to immunization services is instrumental in achieving coverage targets. Typically, private for-profit services favour those in urban areas and of higher socio-economic status (5,6,9). This has the potential to create inequity if the poorest populations are unable to access public sector or NGO services. When immunization services are covered by a national insurance scheme, inequity is likely to be less of a problem (6).

In some countries where government immunization services are low-performing and challenged by conflict or lack of infrastructure, contracting with NGOs has helped decrease inequity by increasing access to services by the poorest, most vulnerable populations (3,6). Areas with services delivered by contracted NGOs have been shown to be positively associated with the likelihood of children being immunized regardless of household wealth (6). The converse has also been seen, e.g. in the Dhaka city cooperation, vaccination is mainly delivered by CSOs, who may charge legal or illegal user fees, even for vaccines provided by the public sector. This has contributed to inequities (18).

Inequity can also be seen at the institutional level. Governments may favour the private sector due to the perception that private health care is more efficient and of higher quality than a public health care system (5). The private sector's involvement can potentially undermine the public sector by diverting public health sector financing to the private sector (6). In countries where a health-care provider may be both a government and private provider, questions may arise about financial incentives for providers to refer public sector vaccination to their private fee-based setting. Issues of equity can also arise in settings where the private sector reaches higher vaccination coverage in the population it serves because of financial incentives to the provider by insurance companies or vaccine producers (6). The fact that certain vaccines may only be used in the private sector can also lead to inequity.

3.5 Collaborative dialogue and formal agreements

In order to overcome preconceived misconceptions and biases between the public and private sectors, private sector engagement should be approached in a way that encourages maximum trust and predictability (9). To build trust and foster dialogue, it is important to build engagement step by step through transparency and shared visions and long-term goals, with realistic expectations about relative contributions, capacities and timelines (9). Starting with small collaborative projects and building relationships over time, with opportunities for short term successes to demonstrate progress, is part of this relationship-building process and allows partners to demonstrate commitment (9). Opportunities for structured dialogue include enabling private sector participation in task forces, leadership committees, information sharing, and involvement in policy changes and prioritization (9).

Collaborative arrangements with influential stakeholders may stipulate that the private sector adhere to national standards of immunization service provision, including reporting, monitoring, and quality service delivery (4,6). Contracts encompassing technical support, or well-defined programme goals and consistent monitoring, generally have a greater likelihood of producing higher coverage (3,4).

Formal agreements can be complex in view of the multiplicity of providers; it is clearly preferable to negotiate agreements with professional or umbrella organizations. Memoranda of Understanding (MOUs) are formalized statements of mutual expectations between two organizations or groups (18). They can be useful for coordination of services, in order to specify services provided and responsibilities, facilitate communication processes, formalize partnership status, and transfer authority within a partnership (19,20). Contracts are another mechanism for governments to arrange collaboration with the private sector to achieve national vaccination targets (13). Contracts are more formal agreements than MOUs and are considered legally binding. Contractual agreements that encompass technical support, and well-defined programme goals with consistent monitoring, evaluation, and financial incentives, can be successful in producing high vaccination coverage (5).

It is essential for all parties to enter into contracts with clear expectations on performance, including performance measurement and consequences (11,21). Practical toolkits are available to assist governments with the process of contracting (13). There is a tendency for governments to limit PSE to short-term contracts, (e.g. 1 to 2 years), for various reasons including government funding cycles (11,21). However, short time periods may not allow for stable cash flow to justify the risk perceived by the private sector (11). Other aspects that are necessary for successful contracts are realistic key performance indicators, flexibility in allocation of resources, and payment (11). In addition, appropriate contract oversight is necessary to ensure that deliverables are being met, issues are being resolved, and communication among stakeholders is effective (11). In some countries, NGOs and CSOs have umbrella organizations, platforms or coalitions representing multiple entities in the private sector that can participate in the PSE process (9,22).

3.6 Advocacy

Health workers serve as an important source of information for parents. A health worker's perception of, and communication about, vaccine safety and effectiveness is important in motivating them to encourage parents to have their children vaccinated and enhance vaccination over the life cycle (23). If a provider, private or public, is unable to communicate the need for vaccination or lacks pertinent information, this will likely have a negative impact on vaccine uptake. Additionally, divergent messaging about vaccination by public and private providers can contribute to a loss of public confidence and vaccine hesitancy (5). It has been noted that improper knowledge among private providers and vaccine hesitancy are greatest for new vaccines, the administration of multiple vaccines in one visit, conjugate vaccines, and where more than one vaccine type, e.g. oral polio vaccine (OPV) versus inactivated polio vaccine (IPV) is currently in use (5). It is therefore important to build health-care worker knowledge, and to study vaccine hesitancy among health-care providers in both the private and public sectors and plan to manage it, in order to fill immunization gaps.

3.7 Programme monitoring, coverage reporting and disease and adverse event surveillance

Monitoring of vaccine coverage, disease and adverse event surveillance are key components of a vaccination programme and should include the private sector (5). Monitoring and supervision of private provider vaccination delivery and participation in adverse event and disease surveillance activities are often inadequate (4,5). Currently information exchange between the public and private sectors is weak in most countries, despite legal requirements existing in most (9). When a high proportion of curative services are provided through the private sector, they become an important source of data on both vaccine-preventable diseases and AEFIs. The absence of their participation results in very low surveillance sensitivity (both for disease and AEFIs). As an example, a study in urban Gujarat state in India found that a minority of private providers (31%) reported numbers of administered vaccine doses to the government, and providers commonly responded that they would not report AEFIs or cases that met surveillance definitions for vaccine-preventable notifiable diseases, including measles and polio. The most common reason given for this was unawareness of reporting requirements (14). Lack of perception of its importance and lack of feedback about reported cases might also contribute to inadequate notification.

In LMICs, monitoring and surveillance systems put in place through contractual agreements are often insufficient with evident gaps in enforcement and compliance (6). In HICs where governments have infrastructure and mechanisms in place to capture this data, it is often left to the discretion of the provider to collect and report data (6). Assessment of the contribution of the private sector to vaccination coverage rates in LMICs can be difficult as doses delivered are often unaccounted for and reporting to the government can be sporadic and not standardized (5). Studies on the private provision of immunization services have often used different methodologies and typically focus on individual vaccines, most commonly hepatitis B and tetanus toxoid, or on defined geographical areas, providing only a limited picture of the situation that may not be representative of the general population (5).

Inadequate reporting from the private sector results in loss of information on vaccines administered and thus on coverage and disease incidence (5). Additionally, inadequate

reporting of AEFIs can lead to underreporting and inaccurate post-market safety surveillance. Lack of reporting of vaccine-preventable diseases impacts detection and investigation of selected disease syndromes, which affects the indicators for overall immunization programme performance (5). Even if private providers do not directly deliver vaccines, their engagement in surveillance of vaccine-preventable diseases and reporting of adverse events is needed. Lack of knowledge about the value of post-marketing vigilance, reporting mechanisms and a 'blame' culture could contribute to underreporting of AEFIs. Engaging private providers through professional associations, providing professional development support, immunization forums, and creating health-information communication linkages can support a collaborative relationship and build understanding between the sectors.

Reporting requirements must be reasonable and aligned with national priorities. A single comprehensive system should be used in both public and private sectors (9). There should be a legal requirement for the private sector to provide information to the government, and accountability systems established to ensure that the data reach the appropriate department (9). Vaccinations administered via the private sector should be included in national vaccine coverage estimations, and in vaccine-preventable disease and AEFI surveillance systems (9). Information must flow in both directions, with private sector immunization data collected and submitted to the government, and government distribution of regular surveillance, regulation and policy updates to the private sector (9,22). In addition, assessment of provider performance and feedback interventions are powerful strategies to improve vaccination practices and coverage. The reporting process should include hospital laboratories and medical records units as well as individual physicians.

3.8 Private providers' role in policy and decision-making

National Immunization Technical Advisory Groups (NITAGs) serve as a technical resource and deliberative body to guide immunization policies and decision-making (23). NITAGs are made up of core members who should be independent and credible experts serving in their personal capacity and not representing the interests of a particular group or stakeholder (23). A credible NITAG and related processes can have a positive impact on

perceptions about vaccination and the NIP, both within government and among professional organizations and funders.

Private sector participation in NITAGs can help ensure a comprehensive and cohesive country immunization service delivery perspective (24). Involvement of private sector partners through liaison members representing various professional organizations, or individual experts serving as core NITAG members can also be beneficial (5,24). Liaison members do not participate in the decision-making process but they can contribute to the discussions. Including private sector members in NITAGs can provide opportunities for them to share their experiences and perspectives and to help address barriers to comprehensive vaccine coverage. Professional bodies often have established national advisory processes to issue recommendations on vaccine use for their members (24). It is important to ensure close collaboration between these professional bodies and NITAGs to avoid conflicting recommendations that could undermine the credibility of both groups and to ensure adherence to national immunization schedules (5,24).

4. Recommendations concerning the engagement of the private sector in national immunization programmes

NIPs should optimize collaboration and communication with nongovernmental providers regardless of the relative contribution of nongovernmental providers to the delivery of vaccination, in order to improve vaccination coverage and quality of services and to reduce equity gaps.

1. Recommendation: Conduct an assessment of the current role of nongovernmental providers in immunization service delivery

The assessment should:

- Review existing information about the nongovernmental sector contribution to vaccination coverage (including direct delivery of vaccination services both for routine vaccination and mass campaigns, immunization advocacy, adverse events surveillance and vaccine-preventable disease surveillance). It should utilize existing information and data (e.g. Expanded Programme for Immunization reviews, Multiple Indicator Cluster Surveys, Joint Appraisals), to the extent possible to avoid overly resource-intensive stand-alone assessments.
- Include an inventory of current and potential key players/stakeholders/professional associations, both for-profit (including independent health providers (e.g. physicians, pharmacists) and corporate (e.g. tea plantations)) and not-for-profit (CSO, NGO, FBO) providers to identify problems, system strengths and challenges, and to identify reforms and activities needed to address the issues identified in the assessment. This inventory of “who is doing what and where”, should cover all aspects of the immunization programme (from vaccine manufacture, import, procurement, education and social mobilization, vaccine programme delivery, to post-marketing surveillance including surveillance of vaccine-preventable diseases and AEFIs).

- Consider health system mapping to identify service delivery gaps and inefficiencies and the need for additional activities to achieve national immunization targets.

This exercise can be useful to foster conversations with private sector participation in the engagement process, and to flag major system challenges relevant to the private sector and allow identification of policy reforms, system changes and potential solutions that could address these challenges.

2. Recommendation: Determine the optimal model of public-private engagement and optimization of service delivery.

Aspects to consider in this model:

- NIPs should determine the optimal model for engagement with the nongovernmental sector tailored to the national immunization system, and the involvement of different for-profit and not-for-profit providers. The role of immunization in the context of universal health coverage and national health insurance schemes should be considered.
- NIPs should facilitate efforts to ensure that appropriate national immunization schedules and high-quality practices are implemented by nongovernmental providers and that they comply with appropriate vaccine handling and storage standards.
- If vaccines administered in the nongovernmental sector are provided by the public sector, they should be provided free of charge and the operational costs be limited to an agreed pre-specified amount and/or the operational costs also be supported by the public sector.
- NIPs should consider the feasibility of contracting elements of vaccination service delivery (e.g. supply chain) to nongovernmental providers as appropriate, to optimize capacity and efficiency.
- Nongovernmental and public providers should use all clinical encounters to assess vaccination status and vaccinate patients as appropriate.
- Nongovernmental providers should educate clients, parents, and caregivers on the importance of vaccination and advocate for vaccination. Communication and advocacy efforts of private providers should be aligned with the NIP.

3. Recommendation: Facilitate dialogue and establish collaborative activities, agreements and contracts.

In order to foster collaborative engagement between the public and private sectors, the following are good practice in policy and dialogue:

- government policy to work with the private sector as a partner in the delivery of services
- formally instituted dialogue mechanisms
- ongoing dialogue between the government and the private sector
- ongoing implementation of engagement policy.

The following steps and procedures are recommended:

- Governments should begin by initially targeting highly influential stakeholders who favour collaboration, then target stakeholders who are in favour but less influential, and finally, inform or co-opt influential stakeholders who are not in favour by keeping them informed.
- Countries should aim for the development of collaborative activities and formal agreements such as MOUs or contracts for PSE which clearly articulate the private sector's role and expected contributions to implementation and monitoring. National and regional immunization plans, programmes and strategies should be developed in consultation with the private sector.
- NIPs should provide the private sector with guidance on advocacy, vaccine coverage reporting, vaccine supplies and vaccine management, safe injection and waste management, AEFI and vaccine-preventable disease reporting, and communication regarding immunization practices, including information on new scientific findings, changes to the national schedule, adverse events, etc.
- Countries are encouraged to include private provider representation in NITAGs, both as core members and liaison members representing professional bodies. This will support two-way information flow and ensure that private sector issues are considered at the time when recommendations and policy guidance are being developed.
- Professional bodies and NITAGs should work together and with the private sector to try to harmonize vaccination schedules (allowing some flexibility, e.g. to optimize individual protection).

4. Recommendation: Ensure data management and reporting.

- Governments or professional organizations should develop a comprehensive database with information on all providers offering vaccinations.
- Countries that provide free vaccines to private providers for administration should require (in a contract or MOU) those providers to report vaccine doses administered in a standard format using data recording tools and reporting processes from the NIP, including electronic registries where these are used. Mechanisms for tracking doses delivered to children who receive vaccines in both private and governmental sectors should be developed.
- Countries should establish clear reporting mechanisms between private providers and the NIP to ensure that vaccinations and related information are reported according to the same standards.
- NIPs should provide private providers who receive vaccine from the government with adequate supplies of vaccines and related injection equipment as per national requirements and also health cards, recording tools, including home-based records, AEFI reporting, health-education materials including checklists for systematic screening and vaccination job aides.
- NIPs should provide training and supervision on data recording and reporting to ensure appropriate and timely reporting by private providers.⁴

5. Recommendation: Provide adequate training and capacity building.

- Private sector vaccinators should undergo training (including competency assessments) on immunization topics, including immunization schedules, safe and appropriate use of injections (including pain mitigation), proper vaccine storage and handling, adherence to vaccine expiry dates, screening for contraindications, proper recording, vaccine messaging, and adverse event and disease surveillance reporting.

⁴ At times there is a lack of capacity to implement and monitor NIP implementation even in the public sector. Capacity building and oversight for private providers may take a toll on limited resources. Professional associations could be engaged to perform this function.

- Initial training should be supplemented with refresher courses. If the private sector lacks the capacity for training, it should be supported by the NIP. Joint training (government and private providers) opportunities should be utilized.

6. Recommendation: Facilitate accountability and performance oversight.

Countries are encouraged to engage the private sector in the development of performance oversight, standards and regulations:

- NIPs should work through professional societies to develop and adopt standards of practice.
- Countries should establish standards and systems for service quality monitoring of private providers. Standards should include practices in all facilities delivering vaccines, including proper storage and handling, appropriate use of injections, proper recording and adherence to safety measures, and waste management and disposal. The quality monitoring system may be managed by the health system through initial and/or periodic public health inspections, or by independent professional bodies and feedback on performance should be provided in order to improve the overall standard of practice.
- Regulations could include vaccine schedules, licensing requirements, price controls, regulation of vaccines, and fee waivers for specific populations, disease and AEFI surveillance, monitoring, reporting, and other regulations pertaining to immunization services.
- There should be regulation and enforcement of adequate training of vaccine providers. This can be done through professional bodies or legislation.
- Vaccines procured by private providers should be held to the same regulatory standards and oversight of the national regulatory authority as those procured by the NIP. Regulatory requirements should not be waived for donated vaccines.

5. References

1. World Health Organization. Global Vaccine Action Plan. Vaccine. 2011-2020. World health organization 149 p.
2. Global Routine Immunization Strategies and Practices (GRISP): a companion document to the Global Vaccine Action Plan (GVAP). WHO, 2016. http://apps.who.int/iris/bitstream/10665/204500/1/9789241510103_eng.pdf?ua=1
3. Meeting of the Strategic Advisory Group of Experts on Immunization, April 2016 - conclusions and recommendations. Weekly Epidemiological Record 2016;21:266-284.
4. Levin A, Kaddar M. Role of the private sector in the provision of immunization services in low- and middle-income countries. Health Policy Plan. 2011;26(SUPPL. 1):4–12.
5. Mitrovich R, Marti M, Watkins M, Duclos P. A Literature Review of Immunization Service Delivery by the Private Sector in Low, Middle, and High-Income Countries. Health Policy Plan. http://www.who.int/immunization/sage/meetings/2017/april/2_Review_private_sector_engagement_Mitrovich_et_al.pdf?ua=1
6. Lahariya C. Vaccine Epidemiology: A review. J Fam Med Prim Care. 2016;5(1):7–15.
7. Mills A, Brugha R, Hanson K, McPake B. What can be done about the private health sector in low-income countries? Bull World Health Organ. 2002;80(4):325–30.
8. Organisation for Economic Co-operation and Development. A System of Health Accounts. 2011 Edition. Paris. 2011;525 p. <http://www.who.int/health-accounts/methodology/sha2011.pdf>
9. Spring CP. Healthy partnerships: how governments can engage the private sector to improve health in Africa. [Internet]. World Bank; 2011. 152 p. Available from: <http://documents.worldbank.org/curated/en/323351468008450689/Healthy-partnerships-how-governments-can-engage-the-private-sector-to-improve-health-in-Africa>
10. World Health Organization. Global Vaccine Action Plan - Monitoring, Evaluation and Accountability. Secr Annu Rep. 2016.
11. United Nations Commission on Life-Saving Commodities Technical Reference Team on Private Sector Engagement. Private Sector Engagement: A Guidance Document for Supply Chains in the Modern Context. Life-Saving Commod Pract Netw [Internet]. 2014; Available from: <http://www.lifesavingcommodities.org/private-sector-engagement-a-guidance-document-for-supply-chain-in-the-modern-context/>
12. Lydon P, Raubenheimer T, Arnot-krüger M, Zaffran M. Outsourcing vaccine logistics to the private sector: The evidence and lessons learned from the Western Cape Province in South-Africa. Vaccine [Internet]. Elsevier Ltd; 2015;33(29):3429–34. Available from: <http://dx.doi.org/10.1016/j.vaccine.2015.03.042>
13. Morgan R, Ensor T, Waters H. Performance of private sector health care: Implications for universal health coverage. Lancet [Internet]. Elsevier Ltd; 2016;388(10044):606–12. Available from: [http://dx.doi.org/10.1016/S0140-6736\(16\)00343-3](http://dx.doi.org/10.1016/S0140-6736(16)00343-3)
14. World Bank. 2008. *The business of health in Africa : partnering with the private sector to improve people's lives*. International Finance Corporation. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/878891468002994639/The-business-of-health-in-Africa-partnering-with-the-private-sector-to-improve-peoples-lives>

15. Olorunsaiye CZ, Langhamer MS, Wallace AS, Watkins ML. Missed opportunities and barriers for vaccination: A descriptive analysis of private and public health facilities in four African countries. *Pan African Medical Journal* 2017;27 (Supp 3):6. doi:10.11604/pamj.supp.2017.27.3.12083
16. Hagan, J et al. (2017) Knowledge, Attitudes, and Practices of Private Sector Routine Immunization Providers in Gujarat, India. http://www.who.int/immunization/sage/meetings/2017/april/4_Hagan_et_al._Knowledge_Attitudes_Practices_Private_Sector_Immunization_Service_Providers_Gujarat.pdf
17. Metcalf CJE, Cohen C, Lessler J, McAnerney JM, Ntshoe GM, Puren A, et al. Implications of spatially heterogeneous vaccination coverage for the risk of congenital rubella syndrome in South Africa. *J R Soc Interface*. 2012;10(78).
18. WHO. Post-introduction evaluation (PIE) of pneumococcal conjugated and inactivated poliomyelitis vaccines. Report of the joint national/international mission, Bangladesh, 26 November-6 December 2015. SE-Immun-100.
19. Johnson ML, Sterthous LM. A Guide to Memorandum of Understanding Negotiation and Development | ASPE [Internet]. 1982. Available from: <https://aspe.hhs.gov/basic-report/guide-memorandum-understanding-negotiation-and-development>
20. Zahner SJ. Memoranda of Understanding Between Medicaid MCOs and Public Health Departments [Internet]. *Managed Care Magazine Online*. 2001. Available from: <http://www.managedcaremag.com/archives/2001/9/memoranda-understanding-between-medicaid-mcos-and-public-health-departments>
21. Thacker N, Choudhury P, Gargano LM, Weiss PS, Pazol K, Bahl S, et al. Comparison of attitudes about polio, polio immunization, and barriers to polio eradication between primary health center physicians and private pediatricians in India. *Int J Infect Dis. International Society for Infectious Diseases*; 2012;16(6):e417–23.
22. Horton R, Clark S. The perils and possibilities of the private health sector. *Lancet* [Internet]. Elsevier Ltd; 2016;388(10044):540–1. Available from: [http://dx.doi.org/10.1016/S0140-6736\(16\)30774-7](http://dx.doi.org/10.1016/S0140-6736(16)30774-7)
23. Wallace, Aaron S., et al. "Experiences with provider and parental attitudes and practices regarding the administration of multiple injections during infant vaccination visits: lessons for vaccine introduction." *Vaccine* 32.41 (2014): 5301-5310.
24. Duclos P. National Immunization Technical Advisory Groups (NITAGs): Guidance for their establishment and strengthening. *Vaccine* [Internet]. World Health Organization; 2010;28(SUPPL. 1):A18–25. Available from: <http://dx.doi.org/10.1016/j.vaccine.2010.02.027>.

