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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>AEFI</td>
<td>adverse events following immunization</td>
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<tr>
<td>BeSD</td>
<td>behavioural and social drivers of vaccination</td>
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<td>CQI</td>
<td>continuous quality improvement</td>
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<td>CSO</td>
<td>civil society organization</td>
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<td>EPI</td>
<td>Expanded Programme on Immunization</td>
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<td>HCD</td>
<td>human-centred design</td>
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<td>HEAT</td>
<td>Health Equity Assessment Toolkit</td>
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<td>HPV</td>
<td>human papillomavirus</td>
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<td>IA2030</td>
<td>Immunization Agenda 2030</td>
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<tr>
<td>IPC</td>
<td>infection prevention and control</td>
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<td>LMICs</td>
<td>low- and middle-income countries</td>
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<td>MOV</td>
<td>missed opportunity for vaccination</td>
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<td>NIS</td>
<td>National Immunization Strategy</td>
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<td>NITAG</td>
<td>National Immunization Technical Advisory Group</td>
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<td>NQPS</td>
<td>national quality policy and strategy</td>
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<td>NRA</td>
<td>national regulatory authority</td>
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<td>PHC</td>
<td>primary health care</td>
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<td>PHE</td>
<td>public health emergency</td>
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<td>QI</td>
<td>quality improvement</td>
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<td>RED</td>
<td>Reaching Every District</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>TIP</td>
<td>Tailoring Immunization Programmes</td>
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<td>UHC</td>
<td>universal health coverage</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>VPD</td>
<td>vaccine-preventable disease</td>
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<td>WASH</td>
<td>water, sanitation and hygiene</td>
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<td>WHO</td>
<td>World Health Organization</td>
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This guide aims to reinforce the central importance of quality vaccination services and to offer renewed direction to the design, delivery and evaluation of quality immunization services to increase coverage and reduce the dropout rate. The intended end-users of this document include policy-makes, immunization programme managers working at national and subnational levels, nongovernmental and civil society organizations, donors, and persons with planning and management responsibilities for the delivery of immunization or broader health services.

The United Nations General Assembly set an ambitious goal to achieve universal health coverage (UHC) by 2030, as indicated in the Sustainable Development Goal (SDG) target 3.8 (1). Achieving UHC means ensuring "access to safe, effective, quality and affordable essential medicines and vaccines for all". To make this possible, health services must be “of sufficient quality to be effective”. 

**Box 1. Scope and objectives**

This guide aims to support the implementation of high-quality immunization services at all levels. It offers clear, actionable steps to assess and systematically make high-quality immunization services possible across the life course.

More information on the actions required to enhance the quality of broader health services can be found in *Quality health services: a planning guide* (2).

**Intended audience**

This document is for policy-makers, immunization programme managers working at national and subnational levels, nongovernmental and civil society organizations, donors, and persons with planning and management responsibilities for the delivery of immunization or broader health services.

**Why quality is the key to the success of immunization services?**

Immunization is key to promoting good health and well-being for all throughout the life course (SDG3) and contributes directly or indirectly to other SDGs (3,4). In 2020 due to the COVID-19 pandemic, 23 million children missed out on immunization, that is 3.7 million more than in 2019 (5). It is expected that 51 million deaths will be averted due to vaccinations administered between the years 2021 and 2030 (6).
Health service data highlight the importance of ensuring quality of care for every patient every time: between 5.7 and 8.4 million deaths every year are attributed to poor-quality care in low- and middle-income countries (LMICs), accounting for up to 15% of deaths in these countries \(^7,8\). Negative experiences with poor-quality services may reduce the utilization of these services, leaving people susceptible to disease \(^9–13\). These figures show the urgent need to support programmes to address the quality of immunization services to better serve those who are missing or delaying life-saving vaccines, and to use these opportunities for a broader health benefit.

The Immunization Agenda 2030 (IA2030) has emphasized, and increased resources for, generating and sustaining vaccination demand, ensuring equitable access and coverage, and closing immunity gaps \(^3\). A core principle of IA2030 is “people-centred”, encouraging programmes to make the needs of the people being served and the health workers who serve them their foremost concern. It is no longer enough for services to be available or accessible: **vaccination services must be of sufficient quality to respond to the needs of the local communities they serve, building relationships of trust to generate resilient demand and sustain equitable coverage.**

**Figure 1. Benefits of strengthening immunization service quality**

There are multiple benefits of strengthening immunization service quality for broader health services and the health system (Figure 1). The immunization coverage rate for each vaccine in the national schedule \(^14\) can offer an indication of the strength and performance of the broader health system. When integrated with other health programmes, namely nutrition and maternal and child health services, immunization services can promote efficiency and improve coverage of essential health services \(^15–17\). In addition, a positive service experience builds trust in the health system and encourages people to seek health services, which can support public health interventions, contributing to building resilient communities and health systems \(^18,19\). Finally, when there is universal access to immunizations services, broader inequities are reduced \(^3\).
**Box 2. Quality immunization services are:**

- **Effective**: providing evidence-based immunization services based on scientific rigor to achieve the best possible outcome.

- **Safe**: avoiding harm by adhering to protocol, monitoring and addressing adverse events, and ensuring that clients and providers are protected in the delivery of vaccines.

- **People-centred**: delivering respectful and compassionate services, designed in partnership with communities and health-care providers to promote vaccine uptake by addressing the needs and preferences of individuals and communities.

- **Timely**: adhering to recommended immunization schedules throughout the life course, reducing delays and dropouts.

- **Equitable**: providing accessible and affordable immunization services that reach all communities and people regardless of age, sex, gender, race, ethnicity, geography, religion, socioeconomic status, language or political affiliation.

- **Integrated**: service design and delivery coordinated within broader health services and systems – including PHC, maternal and child health, nutrition and family planning – to promote better health overall and reduce missed opportunities for vaccination.

- **Efficient**: supporting supervision and training needs to equip health workers to provide quality services, avoid waste, and enhance cost-effectiveness as part of broader health service planning.
What are quality immunization services?

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with evidence-based professional knowledge (20). This definition of quality of care includes prevention, such as immunization, and implies that quality of care can be measured and continuously improved through the provision of evidence-based care that takes into consideration the needs and preferences of service users and communities (8). Vaccine uptake depends on the quality of essential health services delivered throughout the life course. Box 2 summarizes the seven guiding principles for quality immunization services (20).

In addition to these guiding principles, there are three central foundations for quality immunization services to flourish.

- First, quality immunization services depend on the broader health system to ensure optimal vaccination. This includes: governance, leadership and financial commitment to make vaccines accessible and affordable; a trained workforce to deliver vaccination; essential commodities and supplies reaching the last mile; information and data systems to monitor vaccinations systematically and identify service gaps; and integrated service delivery platforms.

- Second, quality immunization services require a strong focus on empowering and engaging people - patients, families, communities and the health workforce. To improve demand and ensure trust in immunization services, families and communities should be engaged in planning, design, implementation and evaluation of these services.

- Third, quality immunization services must be supported by and work alongside other health interventions (20). When planning for quality improvements, linkages with these health interventions must be carefully considered to enhance integration and maximize synergy to increase vaccination uptake (Box 3) (21). Immunization can provide an effective platform for delivering other essential primary health care services (22).

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Box 3. Integrated services

IA2030 stresses the need for effective partnerships with other health programmes to contribute substantially to PHC and achieve better health outcomes for all. Integration can generate significant benefits, such as increasing efficiency, improving user satisfaction and building demand for services. However, if not managed carefully, integration can also create challenges, such as overloading health workers or reducing the demand for services due to stigma or privacy concerns.

For the best outcomes, integration should not be an objective in itself but should be driven by responsiveness to people’s needs. The Working Together integration resource provides guidance to national and subnational managers on how to structure the integration of health services to achieve optimal efficiency in service delivery, as well as optimal service quality throughout the life course (21). Key considerations for the essential structures, such as water, sanitation and hygiene (WASH), safe waste disposal infrastructure, supplies of medical equipment, hand hygiene materials and others, are prerequisites for quality health services.
Immunization programmes must prioritize three interconnected areas to ensure quality immunization services (Figure 2):

1. incorporating quality considerations into immunization services at multiple levels (national, district, point of service and community);
2. ensuring equitable access to quality services; and
3. using data to drive action on the quality of immunization services.

Figure 2. Iterative approach to delivering quality immunization services
Quality considerations must be incorporated into the planning and delivery of the national immunization programme, or be a part of setting a national strategic direction on quality. The WHO Handbook for national quality policy and strategy (NQPS) (23) outlines the following three entry points.

- **Integration into national quality strategy**: Activities to enhance the quality of immunization services can be fully incorporated within the national quality strategy or an equivalent document. This approach allows for harmonization and resource effectiveness and leverages strengths across technical programmes.

- **Within immunization programmes**: Immunization programmes can lead the way and be the first to trial aspects of the national quality strategy, allowing for rapid field testing, the scale-up of effective interventions and the utilization of well-resourced programmes.

- **The national quality strategy and the immunization programme** can be explicitly linked within a single operational planning document.

Whichever of these three options is chosen, several actions can be considered using a multimodal approach (24). Interventions contribute to the delivery of quality immunization services across multiple interconnected levels – national, district, point of service, and community and individuals – are highlighted in Figure 3. The actions across these levels are described in the next pages.
Figure 3. Actions for quality immunization services (content adapted from Delivering quality health services: a global imperative for universal health coverage (20))
**National and district levels**

Immunization programmes need supportive policies and legislation and must establish targets for public reporting or benchmarking (2,20,23). This includes immunization programmes being delivered as part of a package of essential health services to allow for the greatest reach, reduce missed opportunities for vaccination (MOVs), and to make effective use of resources (21).

Across the health system, quality improvement efforts must build on the national immunization strategy and be aligned with plans at the district level (2,20,25,26). Strengthening district health systems to deliver quality immunization services will require careful coordination across all stakeholders (2,21). The key stakeholders to engage include national policymakers, local leaders, civil society organizations (CSOs) and community representatives, public health officials and advisory bodies such as National Immunization Technical Advisory Groups (NITAGs), and national regulatory authorities (NRAs) that take part in vaccine licensing and pharmacovigilance.

A strong health system that can support quality immunization services relies on good governance and accountability (7,20,23,27). To achieve this, it is important to gather data from across the health system, including perspectives from service users, and establish a culture of transparent sharing and routine use of data to inform policy, planning and resourcing (20,23,28). Data and learning should be captured to drive the decision-making and planning processes (27), and for iterative improvements in the essential immunization system and functions, including the supply chain, outbreak surveillance and vaccine forecasting (28). To maximize efficiency and ensure the availability of supplies, vaccine supply chain systems should be incorporated into the national supply chain for other essential medicines and commodities. They should be managed by trained and competent logisticians; and regularly reviewed and adapted to accommodate varying delivery strategies, taking into consideration current stocks, stocks at peripheral levels, seasonal variations and special activities (e.g. outbreak, campaigns and vaccination drives) (29). A wealth of tools are available on the Effective Vaccine Management website to support these essential quality actions (30).

Finally, it is important to **strengthen pre-service training of logisticians and health workers, particularly to support the growing demands on this group.** Training curricula must be regularly reviewed and updated to reflect the latest evidence, standards and practices (31). These training curricula should include the basic principles and applications of quality improvement approaches to enhance the quality of immunization services.

Box 4 outlines the actions required at the national and district levels to optimize the quality of immunization services (2,5).

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* The term district varies according to context. For the purposes of this guide, a district is a clearly defined administrative area that has local government and administrative structures that undertake many of the responsibilities of the national government and has a general hospital for referral (2).
Box 4. Optimizing quality of immunization services at the national and district levels

**Actions required:**

- Update/develop a **National Immunization Strategy (NIS)** aligned with the regional immunization strategy and any existing strategies on quality.

- Establish **immunization quality targets** (e.g., DTP3 coverage, monitoring and managing adverse events following immunization [AEFI] and needle safety) and **enact supportive legislation** (e.g., recall and reminder systems).

- Commit to allocating **timely and adequate human and financial resources** to support quality vaccination services and programmes.

- Ensure good governance and accountability through **transparent planning, monitoring of funds, data-sharing and public benchmarking/reporting of targets**.

- **Learn from implementation experiences** and use emerging data to guide national direction on immunization and quality of care, and update care protocols.

- **Update supply chains and logistical processes** to improve efficiency, accessibility and reliability, and ensure the availability of vaccine stocks in the right time, place and condition.

- **Deliver routine immunization services as part of a package of essential health services** to increase reach, facilitate cost-sharing and to reduce MOVs.

- **Engage with community leaders** and representatives of the civil society to inform decisions on adjustments to systems to be responsive to local needs, particularly for under-vaccinated populations.

**Additional actions:**

- Enhance and sustain **multisectoral collaboration and partnerships** for strong routine immunization systems.

- **Strengthen and maintain existing surveillance** systems to ensure effective monitoring for outbreaks and preparedness plans.

- **Strengthen pre-service training of health workers** and update curricula to reflect the latest evidence, standards and practices.
Point of service level

The quality of immunization services and programmes depends greatly on the skills and knowledge of vaccinators and managerial staff at health facilities (31,32,33). In their unique role as the point of interaction between health systems and communities, health facilities and their staff serve as a bridge between levels, informing learning and quality improvement cycles by communicating feedback and data across the health system (33,34). A dedicated “quality improvement team”, including members of the health facility and the community, may be formed to identify issues related to quality and propose localized solutions (20,34,35). If such groups, with community representation, already exist, these tasks may be added to their work plan.

Health workers are often the most trusted influence on a decision to vaccinate, but they are not always optimally equipped to facilitate a positive experience and to respond to the questions and concerns which they increasingly face (31,36). It is critical to provide added attention and resources to training, particularly in the context of outbreaks or new vaccine introductions (2,31,37,38). Motivating the health workforce is also critical; unless health workers are motivated to maintain standards of excellence in their work, efforts to improve the quality of services cannot succeed. Providing opportunities for training, mentoring and career development, ensuring the timely payment of salaries, and fostering a healthy and friendly work environment are good ways to motivate the vaccination workforce (18,31,32). Regular interaction with supervisors; dialogue and feedback between peers and supervisors; or collaborative, team-based improvement cycles support a healthy work environment and allow for addressing challenges (2,18,20,38).

To improve the quality of services, interventions at the facility level should include the application of clinical standards, patient pathways and service protocols which help to establish evidence-based practices (2,20,37). Safety provisions to reduce harm and clear protocols for monitoring and responding to an AEFI are essential to quality immunization services (31,34,37). Routine audits can help to ensure adherence to protocols and evaluate improvements in quality of care over time. They can also help in understanding barriers that prevent health workers from providing quality care (20,39).

Engagement with subnational or district-level health leadership is critical for supporting quality immunization services at the point of care. The district leadership can provide the necessary on-site support to strengthen or develop the capacities of health workers, ensure adequate vaccination rates across their region, adapt national immunization strategies to their context and expand the reach of services (2,20,23). A strong engagement with the district management also facilitates linkages between immunization services and broader health services.

Box 5 outlines the actions needed to optimize quality at the point of service, building on the key interventions shared (18,36).
Box 5. Optimizing quality at the point of service

**Actions required:**

- Work with district leadership to adapt national immunization strategies to local context and ensure equitable access to quality immunization services.
- Implement and regularly update clinical standards, patient pathways, safety provisions and service protocols to respond to the latest evidence and recommendations.
- Establish reminder and recall systems to prompt vaccine-eligible persons to attend immunization sessions.
- Maintain engagement and alignment with other levels of the health system to achieve high quality of care, using feedback mechanisms to improve processes related to immunization service delivery.
- Ensure immunization staff is well-equipped for community engagement and productive interactions with caregivers.
- Develop clear safety protocols and ensure regular training of immunization staff in latest protocols, AEFI reporting and other key areas of service delivery in accordance with the WHO Standard Immunization Competencies Framework (37).

**Actions recommended for strengthening the health workforce:**

- Improve lines of communication among health workers and supervisors, ensuring staff can rely on regular interaction with their supervisors.
- Use tools such as job descriptions/aids and performance reviews to improve quality of care.
- Provide written feedback from supervisor and peers for reference and evidence-based action planning.
- Create opportunities for growth including training and promotions based on service provision targets or build in incentives for health workers.
- Establish learning mechanisms to improve capacity and share learnings.
- Ensure timely and fair pay of salaries to all staff.
Community level

The systematic involvement of individuals, families and communities is critical for improving and maintaining the quality of health services. **People-centred services** means ensuring services are tailored to the needs of the people and that people are valued as equal partners, working alongside professionals to plan, monitor and achieve the best outcomes for their health (3, 18, 40). Interventions at the community level should focus on the seven quality principles outlined in Box 2 and draw on the interventions outlined for other levels of the health system.

Key interventions include setting up social accountability mechanisms such as transparent public reporting of data, **involvement of communities in planning immunization services**, and creating space for **dialogue and feedback loops** for **immunization services tailored** to suit local needs. This can be done through community dialogues (18), involvement of community members in “quality improvement teams” (20, 41), or community scorecards (27). It is critical that feedback mechanisms incorporate clear processes for communicating back to stakeholders (including communities and the general public) the actions taken on the feedback gathered (18, 35).

Strengthening engagement strategies will contribute to the resilience of services in the face of disruptions and will be useful should a concerted effort be needed to **counter misinformation** related to immunization services in the public domain (18). Community engagement should also focus on **strengthening health and immunization literacy** (20, 23). Public communications must be clear, frequent, transparent and delivered by trusted individuals or groups (influential health workers, religious or community leaders, CSOs) (32). Programmes should foster strong partnerships beyond the health sector (e.g. education, CSOs, etc.) to support effective engagement strategies (21, 23, 38). Where support for vaccination exists in a community, it will be important to build on the favourable intentions to vaccinate by keeping vaccination on people’s minds and **reducing any practical barriers to uptake** (42).

Box 6 outlines the actions needed to optimize the engagement of communities and families in quality immunization services and empower them in this respect.
Box 6. Optimizing quality at the community level

**Actions required:**

- Reorient services to meet the needs of individuals and communities; employ a **people-centred focus**, build on favourable intentions to vaccinate and reduce practical barriers to vaccination.

- **Use feedback mechanisms** to involve communities in the planning, implementation and evaluation of immunization services; and to systematically gather and incorporate end-user perspectives, particularly those of underserved communities.

- **Use clear, transparent and frequent communication** to reinforce the value of vaccines, indicating where and when they can be accessed.

- **Identify information sources trusted by the community** and ensure that these sources are enabled to inform communities about service delivery.

- **Encourage the engagement of community stakeholders in planning** of services to improve ownership and accountability.

- **Strengthen partnerships and local associations** to support quality improvement initiatives for vaccination and contribute to building community health literacy.
Without equitable access to immunization, progress in the delivery of quality services and gains in coverage are undermined. Reaching under-vaccinated groups requires identifying these groups, understanding the barriers to immunization they face and developing tailored strategies to improve access and uptake. These communities often include the urban poor, rural/remote and nomadic populations, and those in fragile or conflict-affected settings (Box 7). In settings with poor health infrastructure, the capacity of health workers is usually quite constrained. It is critical to address this gap and allocate adequate resources to implement strategies to support health workers to reach all populations.

Policymakers and service providers must consider the social factors that play a role in shaping health and their effects on health-seeking behaviour and outcomes. For example, gender-related factors may present a barrier to vaccination and health services in some contexts. Services must be designed to detect and address these differences and influencing factors, working closely with the underserved communities and related stakeholders to reduce barriers to immunization and increase equitable access. To overcome gender-related barriers, national health sector, immunization and quality of care plans must be reviewed to identify entry points for gender integration; the capacity of various stakeholders, including policymakers, providers and users of care, must be built to consider and integrate gender in their areas of work; and sex-disaggregated data must be used to identify and drive targeted interventions to address quality service delivery (43). Working with established CSOs led by women and youth and trusted by the communities can create opportunities for integrated health programmes and support the implementation of transformative interventions to increase immunization uptake (44,45).
Box 7. Maintaining quality immunization services during public health emergency (PHE)

Disruptions to immunization campaigns during PHEs can increase morbidity and mortality from vaccine-preventable conditions. Intensified efforts are needed in the context of service disruption due to social and practical pressures that can exacerbate barriers to vaccination. Efforts to maintain quality immunization services during PHEs should include, for example, monitoring service quality and equitable access throughout emergencies; participation of immunization programmes in the emergency response and coordination mechanisms; and formal service continuity planning. Coordination and adaptation of services is required across population groups to mitigate disruption to routine immunization. Structural considerations to safeguard the public – such as water, sanitation and hygiene (WASH) and infection prevention and control (IPC) measures – are critical. Changes to services must be clearly and frequently communicated to communities.

Immunization in fragile, conflict-affected and vulnerable settings

The high mobility of people in crisis settings presents unique challenges for full immunization and record-keeping. Empowering communities and engaging a range of stakeholders, including the private sector and civil society groups, is critical for reaching and sustaining immunization in the populations that are hardest to reach. Services to these communities may be directly supported, or even provided by, humanitarian and development agencies responding to crises. In both scenarios, integrated quality improvement approaches can help make best use of limited resources, with attention to ensuring access and basic infrastructure.

Proven strategies to identify vulnerable individuals or communities and to improve equitable access to immunization include:

- **TIP: Tailoring Immunization Programmes** (46) is a participatory process to diagnose and address the reasons for under-vaccination in low coverage areas.
- **RED strategy: Reaching every district** (47) focuses on building national capacity starting from the district level to maximize access to all vaccines. **RED-QI** (48) offers specific quality improvement tips to complement the RED strategy for immunization management.
- **Health Equity Assessment toolkit:** is a software application that facilitates the assessment of health inequalities within a country (49).
- **Human-Centred Design 4 Health:** provides rapid enquiry and prototyping guidance to improve health outcomes (50).

Tailored strategies to enhance service quality for underserved groups may include the addition of outreach services where fixed sites are inadequate for the regular provision of preventive health services. Outreach to specific communities or settings offers the opportunity to integrate immunization with other health services such as child health checks and WASH. Use local knowledge to plan outreach routes, timings, and frequency and to ensure that the programme is adequately resourced.
(staff, supplies, vehicles, fuel, vaccine, etc.) (51). Immunization activities must be fully integrated into district operational plans for effective and reliable outreach.

Special consideration and resourcing must be provided for reaching zero-dose children who are systematically underserved. This can be a part of action planning for ensuring equitable access to quality immunization services (Box 8).

**Box 8. Ensuring equitable access to immunization services**

**Actions required:**

- Gather and analyse disaggregated data to **identify the most vulnerable populations** – those unvaccinated or under-vaccinated, or with poor access to quality health services.
- **Link services with communities**, ensuring that communities are served on their own terms and that services are designed around their needs through tailored and targeted strategies.
- **Engage community actors** (e.g. community health volunteers, community-based and civil society organizations, indigenous groups, parent groups and local leaders) in **planning and evaluating** services to continuously respond to end-user needs, particularly among difficult-to-reach populations.
- **Reinforce outreach and mobile services** to reach underserved populations.
- **Plan and manage resources through fair and inclusive structures and decision-making processes** to ensure sustainability of strategies.
- **Continually monitor equity** and evaluate strategies that are implemented.
- Adapt quality immunization services to **fragile, conflict-affected and vulnerable settings**, with a focus on integrated service delivery.
3

USING DATA TO DRIVE ACTION ON THE QUALITY OF IMMUNIZATION SERVICES

Measurement alone does not improve quality; data must be gathered and used with the aim of learning and improvement (21). Sustainable improvements in immunization require efforts across the health system, and these efforts may be directed by the use of data for continuous quality improvement and scale-up of interventions (52).

To ensure transparency, quality and local buy-in, the approach to the gathering and use of data needs to be clear, context-specific, country-owned and locally driven (52). The schematic developed by the SAGE Data Working Group (Figure 4) presents the specific roles and responsibilities of the different levels of an immunization programme related to data quality and use.

Figure 4. Data quality and use roles and responsibilities by level of immunization and surveillance programme - this schematic was developed by the SAGE Data Working Group (52)

<table>
<thead>
<tr>
<th>Data quality roles and responsibilities</th>
<th>Data use roles and responsibilities</th>
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<tr>
<td>- Supports regions with monitoring/quality assurance of national data</td>
<td>- Ensures data availability through dashboards and databases</td>
</tr>
<tr>
<td>- Develops/disseminates training, tools and guidance</td>
<td>- Monitors progress towards global goals</td>
</tr>
<tr>
<td>- Organizes/supports data quality workshops at global/regional level</td>
<td>- Provides feedback for regional/national analyses/evaluations</td>
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<tr>
<td>- Monitors progress towards global goals</td>
<td>- Develops evidence-based global immunization strategy</td>
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<tr>
<td>- Provides data to global level</td>
<td>- Supports regional strategy development</td>
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Regional
- Offers data quality monitoring and support to countries
- Develops/disseminates training, tools and guidance
- Organizes regular regional data quality workshops
- Provides data to global level
- Monitors progress towards regional goals
- Develops data-guided regional immunization strategy

National
- Offers data-related support and training to subnational level
- Sets national data quality standards
- Monitors data quality and follows up with subnational level
- Archives data
- Shares data upwards
- Monitors and feeds back local coverage, VPD incidence and preformning indicators
- Validates national and local denominators (in collaboration with national statistics office)
- Uses data to inform routine and emergency public health action

Subnational
- Monitors data quality and follows up with facilities
- Shares data upwards
- Offers data-related support and training to facilities
- Monitors and feeds back local coverage, VPD incidence and preforming indicators
- Supports and trains facilities to use data for decision-making
- Uses data to inform routine and emergency public health action
- Liaises with central level to define district target populations

Local (facility)
- Collects inputs and shares quality data in a timely manner
- Complies with data standards
- Performs regular data quality checks
- Tracks undervaccinated individuals and communities
- Supports identification of target population (denominator)
- Uses data for vaccine supply, staffing and planning

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Figure 4. Data quality and use roles and responsibilities by level of immunization and surveillance programme - this schematic was developed by the SAGE Data Working Group (52)
Immunization programmes already collect data that can be used for quality assessment (Figure 5) (53). These measures – for example funds available, sessions held, vaccines administered, and deaths due to vaccine-preventable diseases (VPD) – allow for monitoring of the provision and impact of care. However, knowledge must be generated not only on the outcomes, but also on experiences of care that are valued by people by measuring patient- and community-reported quality indicators (31). Measures of the experience of care can be collected routinely or ad hoc, using a range of tools for community engagement and data gathering (see Annex 1). These approaches depend on participatory research to foster commitment and leverage the knowledge and experience of local staff and users to resolve identified issues.

Figure 5. Existing metrics of immunization services that address quality of care (53)

To improve the quality of health services specifically for immunization, it is vital to establish a culture of routine use of data to inform planning, service design and improvement. Incremental and continuous use of data provides a sustainable and scalable approach to improving the quality of services. Adopt a systematic approach to harnessing the lessons learned on the design and delivery of immunization services that includes collaborative data review for decision-making from the facilities (33,35,54) to the subnational and national levels.

For systematic monitoring at the community level, data must be collected regularly on the main drivers of uptake and the key indicators for quality of immunization services. The Data for Action Guidebook, containing a range of tools to assess the behavioural and social drivers (BeSD) of vaccination (55), provides step-by-step guidance for gathering, analysing and using data for programme planning. The “practical issues” domain from the BeSD framework supports a standardized assessment of the key indicators for quality immunization services (e.g. access, affordability, respect from providers). The BeSD framework and tools are grounded in the evidence regarding what works to increase uptake, helping to translate insights into intervention design.
Box 9. Using data to drive action and optimize quality

Actions required:

• At the outset, consider how data will be used to inform programmatic action; prioritize data that are useful for driving action for improvement, rather than those that are “nice to have”.

• Share and analyse data with partners and the public regularly for increased transparency and accountability.

• Plan and monitor interventions iteratively and inclusively, with the involvement of all key stakeholders, including community and civil society representatives.

• Establish learning and feedback mechanisms in programme design to continuously improve immunization service delivery and experience of care.

• Triangulate existing metrics from immunization programmes with new data from the social and behavioural sciences to offer clarity on the reasons for low coverage.

Quality considerations for new vaccines

This document outlines quality considerations with a focus on routine immunization, which can be applied to any vaccine at any age, whether existing or new. Further, these considerations can be adapted for use in rolling out immunization campaigns or programmes for specific vaccines or specific populations.

The introduction of new vaccines must be situated in relevant and age-appropriate delivery platforms, together with other health services or interventions. For example, many human papillomavirus (HPV) vaccination programmes are delivered in schools to ensure high uptake among the target population. A new vaccine must be introduced in partnership with the vaccine recipients in order to take their perspective into account and the guiding principles for quality must be routinely monitored and addressed (Box 2).

For considerations specific to COVID-19 vaccines, see Annex 3.

Conclusion

Immunization programmes need to be linked with efforts to deliver quality health services at all levels. This is especially important in the context of a drive to achieve UHC, reduce morbidity and mortality due to VPDs and contribute to the SDGs. This is key to the IA2030 vision of a world where everyone, everywhere and at every age fully benefits from vaccines for good health and well-being (3).

In many countries, immunization programmes already have well-established quality management processes that offer an opportunity to inform the national strategic directions on quality. In fact, immunization programmes can be pathfinders for
system-wide efforts to implement the national strategic direction on quality health services (bringing experience, lessons learned and strong foundations for the initial roll-out of the strategy).

Existing quality improvement efforts affect clinical outcomes positively but require the commitment of resources from health ministries to be sustained (56). Interconnected actions are needed to enhance the quality of immunization services and programme management at the district and health-facility levels to improve vaccination and health outcomes (57,58).

Several urgent actions are needed at the systems level. These include providing infrastructure for information and data measurement, reporting and use; strengthening the partnerships between health care providers and health users that drive quality immunization services; establishing and sustaining a professional workforce to deliver high-quality immunization services; demonstrating financial commitment to immunization based on the principle of value; and investing in research on the improvement of the quality of immunization services.

At the point of service, immunization programmes need to: implement evidence-based interventions that demonstrate improvement; measure performance continuously; act on data and take an iterative approach to quality improvement; promote a culture that will reduce harm to patients; build resilience by focusing on quality to enable the prevention, detection and response to vaccine-related threats; provide infrastructure for learning on quality immunization; and facilitate knowledge management to improve immunization services within the context of broader health services and health systems.

Individuals and communities should be active participants in the design, planning and evaluation of immunization services. It is critical to systematically engage communities and routinely gather and incorporate their feedback into programmatic decision-making to improve the quality of these services and build community ownership in the process. Incorporating the perspective of communities into the planning and delivery of immunization services is key to achieving equitable access to immunization and reaching underserved communities.

A focus on quality of immunization services has the potential to yield positive health outcomes for populations across the world. Building on established quality strengthening efforts in this area provides an opportunity for sustained quality immunization services that are integrated with broader health services. Such efforts may bolster the collective response to the IA2030 and improve the resilience of the health system as a whole.
REFERENCES


Primary health care (PHC) is the bedrock of health systems and is a key driver for achieving UHC. It is often described as the most inclusive, equitable, cost-effective and efficient approach to enhance people’s physical and mental health, as well as social well-being. The programmes that deliver vaccination offer a unique point of entry for other PHC services. Reaching boys and girls at equal rates and in more households than any other routine health service, immunization is one of the most equitable health interventions (59). A life-course approach to immunization offers important opportunities for integration with other age-appropriate health interventions. Strong routine immunization services can be leveraged to strengthen PHC systems that strive to achieve UHC.

The relationship between immunization services, PHC and UHC is mutually beneficial. Vaccination services, when integrated with other services at the facility and community levels – situated within a broader service delivery approach across all health system levels – have the potential to meet people’s needs, systematically address the broader determinants of health and well-being, and empower individuals, families and communities to optimize their health (20).

**Figure A1. Relationship between quality primary health care and achievement of universal health coverage (25)**
Immunization services are closely linked to the PHC approach in all three areas – empowerment of people and communities; multisectoral policy and action; and integration of primary care services and essential public health functions. Efforts to improve immunization services within the PHC context must systematically address quality in broader health services.

In 2020, WHO and UNICEF launched the Operational Framework for Primary Health Care (60), which outlines a series of strategic and operational levers requiring attention by countries as they plan and implement PHC reforms within their health systems. One of these levers focuses on systems to improve the quality of care and highlights the need for a “multimodal suite of interventions tailored to the local context, while simultaneously working to improve the health system and culture that support the delivery of quality care”. Strengthening the quality of immunization services can facilitate this as it contributes to the immunization goals and fosters trust in the health system.
ANNEX 2. KEY TOOLS AND RESOURCES

The key tools and resources to assess and address the quality of immunization services that have been referenced in this document are consolidated here.


Offers both qualitative and quantitative tools to identify the barriers to vaccination and to measure the individual and social constructs that drive immunization in a given context.


A short guide intended for lower resource settings outlines an iterative process for locally co-designing tailored immunization programmes with communities.


This is a Demand Hub workstream dedicated to consolidating tools and advancing the evidence base for approaches to improve service experience that result in better immunization outcomes.

Health Equity Assessment Toolkit. ([https://www.who.int/data/gho/health-equity/assessment_toolkit](https://www.who.int/data/gho/health-equity/assessment_toolkit))

HEAT is a software application that facilitates the assessment of within-country health inequalities.


The HCD is a field guide for rapid enquiry that offers prototyping guidance to improve health outcomes through stakeholder engagement at the subnational level.


This manual offers an overview of the MOV strategy for increasing vaccination coverage and improving timeliness of vaccinations.


RED focuses on building national capacity from the district level up to maximize vaccine access.

This how-to guide offers specific quality improvement concepts and tools to complement the RED strategy for immunization management.

Tailoring Immunization Programmes (TIP). Copenhagen: WHO Regional Office for Europe; 2019. Licence: CC BY-NC-SA 3.0 IGO.

TIP promotes a participatory process to systematically diagnose and address reasons for under-vaccination in low-coverage hotspots.

ANNEX 3. QUALITY CONSIDERATIONS IN IMMUNIZATION SERVICES FOR COVID-19 VACCINES

The quality improvement approaches outlined in this guide may be applied to the implementation of immunization services for any vaccine across the life course, including COVID-19 vaccines. Figure A2 summarizes key actions that may be taken across the health system for optimizing the implementation of such immunization services.

**Figure A2. Key actions that may be taken across the health system for optimizing the implementation of immunization services**

- **National and district**
  - Strategic communications grounded in continuous monitoring and management of behaviour change
  - Develop training modules to support provider behaviours and improve uptake of COVID-19 vaccines
  - Ensure transparent planning, data-sharing and public benchmarking
  - Use data to learn from implementation experience and guide planning
  - Update and strengthen critical support systems (e.g. supply chain, surveillance, integrated essential health services)

- **Point of service** (health facility level and workforce)
  - Ensure a motivated and capable workforce
  - Provide systems for mentoring, supportive supervision, peer review and capacity-building
  - Establish safety provisions, including personal protective equipment, infection prevention control approaches and structural nudges at the vaccination site to reinforce desired behaviours
  - Develop clinical standards, patient pathways and service protocols (including AEFI protocol and reporting)
  - Establish systems to prompt caregivers to attend immunization services (e.g. default appointments and/or reminders)

- **Community and individuals**
  - Establish feedback loops for improved immunization service experience
  - Reorient services to meet the needs of communities and individuals (e.g. location, language, timing of sessions)
  - Involve communities in planning services and quality improvement efforts, including facilitation of cross-sectoral dialogues
  - Provide clear, transparent and frequent communication about vaccination
  - Strengthen partnerships to support community engagement and quality improvement efforts

Guiding Principles of Quality: Effective, Safe, People-centered, Timely, Equitable, Integrated, Efficient

Data driven
For more resources on implementation considerations for a COVID-19 vaccine, see the range of resources provided in the COVID-19 vaccine introduction toolkit (https://www.who.int/tools/covid-19-vaccine-introduction-toolkit).

For further global guidance resources on maintaining quality routine immunization services during the COVID-19 pandemic, see:


This global guidance provides a framework for countries to develop their national immunization strategies.


This document provides operational guidance and information to support planners and immunization programme managers at the national and sub-national levels on microplanning for COVID-19 vaccination implementation.


This document provides guiding principles and considerations to support countries in decision-making on the provision of immunization services during the COVID-19 pandemic.


This guidance helps national immunization programmes to establish or refine a catch-up vaccination strategy as an essential component of the routine immunization programme.


Maintaining essential services despite the COVID-19 pandemic remains critical. Immunization is one of the several essential services that should not be stopped even with the challenges faced due to the COVID-19 pandemic (see page 44 of the guidance).


An interruption of routine immunization services during COVID-19 may lead to a secondary crisis with VPDs. This document provides guidance to support the continuity of routine immunization while mitigating the risks of COVID-19.