Improvement Methods Toolkit

Drawing on over 25 years of experience with health care improvement, the USAID ASSIST Project applies to health care the following core principles that underlie the science of improvement:

• The work of delivering health care happens in **processes and systems**. Understanding them and changing them in ways to produce better results is at the heart of improving health care.

• **Working in teams** of different health care providers involved in delivering care is key to making changes work and fostering ownership of the changes to enhance sustainability.

• **Testing changes** to determine whether they yield the desired results is at the heart of improvement. Data are used to analyze processes, identify problems, determine whether the changes have resulted in improvement, and help determine whether to abandon, modify, or implement the tested solution.

• Care should meet the **needs and expectations of patients, clients, and communities**.

• **Shared learning**, where multiple teams work on common aims and exchange information about what worked, what did not, how it worked, and why, is an essential part of improvement, producing better and faster results.

In the words of Paul Batalden “**Every system is perfectly designed to achieve exactly the results that it achieves.**” Therefore, in order to achieve a different level of performance, we have to make changes to that system in ways that permit it to produce better results.

Improvement methods help us make systematic changes in the way health care is delivered to increase the likelihood that those changes will result in better care.

**Methods**

Click on the improvement methods listed below to better understand their application to improving health care:

- **Accreditation**
- **Audit and Feedback**
- **Certification**
- **Collaborative Improvement**
- **Licensing and Registration**
- **Organization of Work**
- **Performance-based Incentives**
- **Process Improvement and Redesign**
- **Reminders**
- **Standards and Evidence-based Guidelines**
- **Supervision**
- **Training**
Accreditation

What is accreditation?

Accreditation is a process by which a recognized body (governmental or nongovernmental) assesses and then recognizes that a health care facility meets pre-established performance standards. A committee of experts (e.g., medical associations, Ministries of Health, and non-governmental organizations) working with the accrediting body develop the standards for accreditation. They periodically revise standards to reflect advances in technology, treatment regimes, or policy changes.

To conduct accreditation of a health care facility, external surveyors evaluate the facility’s achievement in providing services and goods to clients. The survey team then recommends whether the facility should be accredited or should implement further improvements and be re-evaluated in the future. Renewal of accreditation status is usually required every two to three years.

How does accreditation improve health care quality?

Accreditation encourages facilities to improve by focusing on optimal or desirable, rather than minimum, standards of care. Through accreditation, health care organizations are encouraged to pursue increasingly higher levels of quality beyond the minimum needed for licensing. Traditionally, accreditation has been a voluntary process in which organizations choose to participate, rather than one required by government regulations. Recently, however, some countries have made participation of health care organizations in accreditation programs compulsory. Other countries, such as the United States, have tied accreditation systems to financing mechanisms, thereby creating a strong incentive to achieve and maintain accredited status.

The introduction of accreditation programs into developing country public sector health systems has resulted in recognition of the need to adapt traditional accreditation methodologies to the realities of the severe resource constraints and weak underlying performance of many health systems. Providing sufficient resources to effectively implement an accreditation program is also critical, since starting up an accreditation program without assuring its continued funding is likely to waste resources.

The International Society for Quality in Health Care (ISQua), a global network of organizations committed to promoting continuous improvement in the safety and quality of health care, offers an international accreditation program to accredit accrediting bodies. The ISQua website offers additional information about accreditation.
Audit and Feedback

What are audit and feedback processes?

Audit and feedback processes encompass a wide variety of interventions, including: performance review, supervisor assessment, medical record review, results generated by computerized information systems, self-assessment, and accreditation surveys. Audit and feedback is used to enhance health care professionals’ performance and thereby improve the quality of health care.

Types of audit and feedback processes

An audit and feedback intervention used widely in developing countries is supervisory audits using structured checklists to observe health worker performance or review records. Anecdotal evidence and the few published studies suggest that supervisory audit can increase performance according to standards, particularly with respect to history-taking, physical examination, disease classification, treatment, and counseling.

A QI Coach from the Regional Health Management Team works with service providers to verify data. Accurate data allows providers to better understand the population they are serving and to make informed decisions, essential for forecasting and planning activities.

A health care provider may conduct self-audit or self-assessment to reflect on his or her own performance strengths and weaknesses and to identify learning needs and areas for improvement. A team, reviewing clinical records for a facility to measure performance across all providers in the facility, may also conduct self-assessment. Improvement collaboratives [hyperlink to: collaborative improvement] typically rely on monthly team self-assessment of compliance with standards to track the effects of changes made to improve care.

Peer review involves review of a provider’s performance by other providers of the same profession. Peer reviewers may or may not be practicing in a different location. Audit and feedback interventions based on peer review and support rely on the major role that colleagues’ judgment and beliefs play in an individual provider’s evaluation and interpretation of new information. Peer review uses the influence and pressure of persons in the target practitioners’ social network to affect individual performance. Peer-mediated strategies encompass a diverse group of interventions, including formal peer review, participatory guideline development, and team-based process improvement and problem solving. Studies found that peer review was more effective in changing practice routines when it was used as part of a broader quality improvement approach that included participatory development of criteria, quality circles, or group discussion and feedback.

Team-based peer review and support approaches may be more useful to achieve performance according to standards on an institutional rather than individual provider level.

Effect of audit and feedback interventions

A recent review about audit and feedback to improve health care quality and patient safety concluded, “audit and feedback may be effective in improving professional practice, but the effects
are generally small to moderate....The benefits of audit and feedback measures are most likely to occur where existing practice is furthest away from what is desired, and when feedback is more intensive.”

Certification

What is certification?

Certification is a voluntary process undertaken to demonstrate special capability or competence. To undergo certification, an established authority, such as a government agency, professional association, or specialty board, evaluates and recognizes either an individual or an organization as having met pre-determined criteria, such as expert knowledge, skills, and demonstrated competence in a specialty area.

Certification of individual providers

Certification of health care providers shows that the he or she has successfully completed an approved educational program and evaluation process and possesses the knowledge, skills, and educational experience required to provide quality patient care in a specific field.

Certificates presented by the Reproductive and Child Health Alliance (RACHA) to health providers who completed a competency-based IUD Insertion/Removal and Infection Prevention Training Course in Pursat, Cambodia. © 2002 Marcel Reyners, Courtesy of Photoshare

Health care provider certification through specialty boards often requires a re-certification after a defined period of time. This type of certification evaluates an individual provider on numerous levels, including experience, skills, professional standing, clinical performance, and even outcomes. Although certification is voluntary, an individual who does not meet re-certification requirements may not be legally able to deliver certain services if licensure for a specialty area is dependent on certification.

Professional societies in many countries often certify competence in their clinical specialty. Certification of professional nurse-midwives by the American College of Nurse Midwives, for example, requires graduation from an accredited teaching program, passing a national certification exam, continuing education, and, more recently, re-taking the certification exam every eight years.

Interest in provider certification or recognition has grown recently as part of pay-for-performance programs. The National Committee for Quality Assurance (NCQA), a non-profit, health care quality oversight organization in the United States, offers Physician Recognition Programs for specialists and primary care physicians that involve self-assessment and reporting of quality measures data. Health insurance plans and the United States Centers for Medicare and Medicaid Services now accept data reported through NCQA Physician Recognition Programs as evidence of eligibility for incentive payments to reward providers who demonstrate the highest levels of performance against evidence-based clinical standards.
Certification of health care organizations

When applied to an organization or entire facility, certification usually implies that the organization has additional services, technology, or capacity beyond those found in similar organizations. Certification distinguishes the organization as capable of practicing or delivering services in a specialty area and may even grant the organization the legal authorization and funding to perform specialized activities. For example, a laboratory may pursue certification that allows specialized staff to conduct procedures and permits the use of specific equipment and materials. In many countries, certification of readiness to provide HIV care and treatment is a prerequisite for the facility to receive and be able to dispense antiretroviral drugs. Government authorities and insurance companies may create an incentive for organizations to seek certification as a requirement for reimbursement for specialized services.

UNICEF and WHO have used the certification model in their Baby-friendly Hospital Initiative, which recognizes health facilities that have met the ten steps to support breastfeeding with recognition as "baby-friendly".

In recent years, some countries have become interested in applying standards established by the International Organization for Standardization (ISO) to health sector processes and organizations to certify that they conform to the requirements specified in ISO standards. ISO 9001 standards for quality management systems have attracted particular interest of health care organizations that see the establishment of a quality management system as an opportunity to improve the quality of health care while reducing the costs. Similar to accreditation, ISO certification is resource-intensive because it requires periodic re-evaluation by external ISO-certified assessors.

Collaborative Improvement

What is collaborative improvement?

Collaborative improvement is a structured improvement approach that organizes a large number of teams or sites (i.e., “collaboratives”) to work together for 12- to 24-months to achieve significant improvements in a specific area of care. The collaborative approach combines traditional quality improvement methods of teamwork, process analysis, introduction of standards, measurement of quality indicators, training, job aids, and coaching with techniques based on social learning and diffusion of innovation theories.

How do collaboratives work?

- In a collaborative, teams of health care providers from different health care facilities test out changes to improve health care delivery.
- Teams use a common set of indicators to measure the quality of the care processes the collaborative is trying to improve and, where possible, the desired outcomes.
- The collaborative organizes regular sharing of results among teams through learning sessions in which teams learn from each other about which changes were successful or not.

Collaboratives result in a dynamic improvement strategy in which many teams working on related problem areas can learn from each other to facilitate rapid dissemination of successful practices. In its emphasis on spread and scale-up of improvements, the improvement collaborative model offers a powerful tool in the arsenal of proven improvement methods.

Experience with the Improvement Collaborative Approach

- The Institute for Healthcare Improvement (IHI) pioneered the improvement collaborative
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approach in 1995 to address a common problem in the health care system in the United States: while evidence existed for a particular standard of care, it was not routinely practiced. IHI designed the collaborative model to overcome obstacles to the consistent application of evidence-based practices and at the same time increase the pace and efficiency of improvement in health care, calling the approach the “Breakthrough Series” or BTS Improvement Collaborative.

- USAID has supported the widespread adaptation and application of the improvement collaborative approach in assisted countries since 2003. Since then, USAID has funded over 100 improvement collaboratives in developing and middle-income countries, mainly involving teams of public sector health care providers. These efforts, begun under the Quality Assurance Project and continued under the USAID Health Care Improvement Project, USAID ASSIST and other projects, made a number of adaptations to the BTS Improvement Collaborative model to accommodate government health system structures, introduce more content on quality improvement methods and measurement in learning sessions, and emphasize the role of coaches in guiding and motivating site teams. Like the collaboratives supported by IHI in the United States and other countries, USAID-supported collaboratives have achieved rapid and significant improvements in the quality of diverse health care services and demonstrated that the gains made in quality of care through collaboratives could be maintained over time.

- USAID-supported collaborative improvement applications have found that shared learning among teams engaged in collaborative improvement accelerates the adoption and spread of evidence-based approaches across sites. Reviewing the process of service delivery allows teams to see what barriers and bottlenecks exist and need to be addressed. Data are a vital part of collaborative improvement, showing whether changes being tested/implemented have yielded the desired outcome. While collaborative improvement has been extensively applied to clinical care processes (both preventive and curative), it has also been applied to non-clinical areas like human resources management, information systems, supply management, community-based care for vulnerable children, and social services.

**Licensing and Registration**

**What is licensing?**

Licensing is a legal form of quality regulation of healthcare services where a governmental authority grants a license to a health care practitioner to engage in an occupation, or to a health care organization to operate and deliver services.

Licensing differs from other approaches to quality regulation in that it is mandatory and is performed uniquely by a government agency. Licensing standards are typically set at a minimum level, defined by the government as that needed to ensure health and safety in the country. For individual providers, licensing standards are usually defined in terms of training (e.g., completion of degree from an acceptable training institution) and demonstrated technical competence (e.g., passing of a licensing examination). Although licensure exams are the most common example of regulation through licensing, other regulatory programs related to licensing include the reciprocal granting of licenses to professionals of other countries, establishing standards for professional practice, and developing systems to investigate and punish professionals that violate professional license standards.

A critical requirement for achieving the intended impact of licensing is to build in mechanisms to ensure that the desired performance or competence is sustained over time. Licensing only at the point of entry into the health care market is insufficient to provide assurance to the public and to health sector institutions that providers maintain competency throughout the span of their careers.

Time-limited licenses and clear requirements for renewal are essential to create an incentive for providers to remain current through continuing education and for organizations to maintain physical
infrastructure and capacity. A related issue is the need for enforcement of sanctions or consequences for loss or reversal of licensing status. This includes procedures for disciplinary action against licensees who fail to maintain the conditions of licensing as well as procedures for reporting and handling impaired or incompetent providers and facilities.

What is registration?

Similar to licensing is registration, by which a provider is admitted into a registry recognized by the government as providers of health care services in the country. Registration may be a more effective mechanism for quality regulation than licensing, if registration requirements are based not only upon completion of educational requirements but also demonstrated technical competence, such as passing of a qualifying examination. Registration has the added advantage of enabling governments to create a database of information about health care professionals that are practicing or intending to practice their profession in a given country.

Licensing and registration of health care facilities

Organizational licensing or registration is used in some countries to enable organizations to legally deliver health care services; granting of the license is often based on on-site inspection to determine if minimum health and safety standards have been met. The licensing of health care facilities differs from accreditation and certification in that it is mandatory, thus providing the government control over the entry and operation of facilities in the health sector. However, in some countries, a new registration or licensing process has been proposed for existing health care facilities that more closely resembles accreditation in the sense that detailed standards covering various functional areas have been proposed, with initial and subsequent evaluation of compliance, and the possibility of assistance being provided to facilities to help them achieve the standards.

Organizational Interventions

What are organizational interventions?

Organizational interventions are those that either provide additional resources or equipment; introduce organizational changes, such as redistribution of tasks; or redesign processes to help improve performance. These interventions are often used to facilitate and reinforce health care performance in accordance with standards. Principal advantages of organizational interventions are that they are usually inexpensive and under the control of managers.
Flow chart developed by QI team at Buikwe Hospital in Uganda showing care process for patients with diabetes or hypertension, including triage to decide if they need medical or psychosocial support.

Increasing concern with preventable medical errors has fostered support for organizational interventions. The Institute of Medicine report on ways to reduce medical errors strongly advocated process redesign to simplify and standardize key health care processes and to design tasks in ways that ensure safety and facilitate correct performance. Key principles of such process redesign efforts are to avoid reliance on memory and use constraints or forcing functions to guide the health worker to do the right thing and make it harder to do the wrong thing.

Organizational interventions to improve work processes play a prominent role in much of health care quality improvement activities in low- and middle-income countries, but have not often been subject to rigorous evaluations of their effectiveness.

What organizational interventions can improve health care quality?

The USAID-supported Maximizing Access and Quality (MAQ) Initiative identified a set of guiding principles to improve the organization of health care delivery.

- Use evidence-based practices to provide effective health care efficiently
- Improve links with other services and delivery sites so that clients can obtain care appropriate to each level of the health care system
- Minimize paperwork and maximize information use
- Pay attention to the physical factors of service delivery, which include supplies, equipment, and workspace
- Tailor service hours and schedules to meet both clients' and providers' needs
- Examine client flow to make sure waiting times are minimized, giving more time for clients to interact with providers
- Define division of labor and job responsibilities to let staff know what is expected and to enable them to make decisions and take action
- Consider social factors, such as good supervision, to motivate and support staff and encourage skill development
Performance-based Incentives

What are performance-based incentives?

Performance-based incentives (PBI) include both monetary and non-monetary incentives to encourage health-related actions or achievement of performance targets.

*Supply-side PBIs* are used to improve the quality and availability of services. They are given to health care providers or managers at the facility, district, or national level, and are conditional on achieving service delivery or public health goals. Supply-side PBIs are now often being incorporated into national public health delivery systems, social insurance schemes, contracts with service delivery organizations, and safe motherhood schemes in low- and middle-income settings.

![Image](image.png)

Award of recognition to the best sites in the pilot phase of the ART/PMTCT improvement collaborative.

*Demand-side PBIs* encourage the demand for and access to essential health services. They are provided directly to households or patients in order to change certain health-related behaviors. One example of a commonly used PBI scheme is the conditional cash transfer program.

How do PBIs improve health care?

Historically, performance-based incentives in low-resource settings have incentivized units of care, such as an attended birth, rather than performance measures linked to quality of care (that is, what was done in the care process). However, there is increasing recognition of the potential negative, unintended consequences of productivity-driven performance incentives on quality of care, as well as recognition of the potential benefits of quality performance measures in low-resource settings for improving delivery of best practices.

Providing incentives to motivate providers and organizations to participate in and maintain quality performance can be important, particularly in voluntary programs like *accreditation*. Financial incentives, such as linkages to payment systems, market advantage, reduction of liability insurance premiums, preferential reimbursement from private insurers, and quality bonuses can be powerful motivators to maintain quality programs, reward organizations’ superior performance, and stimulate professional commitment. Symbolic rewards, including professional and public recognition through publicity or special awards, can also be highly motivating, particularly if these are perceived to endow the provider or organization with a competitive advantage.

PBIs have become a potentially important and powerful tool to improve health in developing countries. While much experience has been gained over the last several years in a variety of approaches, more evidence is needed about the *implementation and sustainability of PBI interventions in low- and middle-income countries*.
Process Improvement and Redesign

What is process improvement and redesign?

In process improvement and redesign, teams made up of health care workers analyze where current gaps in performance or service delivery exist and where changes can be made. Improving processes requires detailed knowledge of the area identified for improvement and ongoing data collection to monitor the process over time. Teams may use a number of tools for analyzing the underlying process, such as flowcharts and cause-and-effect analysis. Time series charts are a data presentation tool that is useful for analyzing the performance of a process over time, to determine whether changes introduced have improved the process.

Once a team thoroughly understands the problems with the current process, it can develop and implement changes, study the results, and test changes based on the results. This iterative testing approach is known as the Plan-Do-Study-Act (PDSA) cycle.

Process improvement and redesign draw on the work of Dr. W. Edwards Deming, a statistician who proposed that improving the quality of the manufacturing production process and eliminating delays, duplications, and errors would result in higher quality products and services at lower unit costs. Dr. Deming took his ideas to Japan in the 1950s, where they were embraced and applied to manufacturing automobiles, electronic appliances, and other consumer goods. The same ideas began to be applied to health care in the United States in the 1990s.

How are process improvement and redesign applied in health care?

A helpful resource for process improvement is the book, *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (Jossey-Bass 2009). Part One of the book addresses the basic skills needed to support process improvement: 1) using and learning from data, including understanding variation in data; 2) understanding processes and systems of work, and the relationships among the processes that make up the activity you are trying to improve, 3) how to apply creative thinking and other strategies to come with ideas to test; 4) how to organize tests of these ideas; 5) how to implement (scale up) an idea or set of ideas that work; and 6) how to engage people in supporting and embracing change.

*The Improvement Guide* also includes a “Resource Guide to Change Concepts” which provides an inventory of generic ideas of how to change any process, organized by nine categories of change: 1) eliminate waste, 2) improve work flow, 3) optimize inventory, 4) change the work environment, 5) enhance the producer/consumer relationship, 6) manage time, 7) manage variation, 8) design
systems to avoid mistakes, and 9) focus on a product or service.

Another approach to process improvement is the “Lean” method developed in the Japanese automobile industry. Lean seeks to do more with less, by exerting less human effort, less equipment, less time, and less space while at the same time getting closer and closer to delivering exactly what customers want. Lean thinking has been applied to hospital systems in the United States to reduce waste and improve processes so that all work adds value and serves the customer's needs.

Reminders

What are reminders?

Provider forgetfulness and/or lack of awareness, as opposed to deficiency in knowledge or skill, can be major barriers to performing according to standards. Reminders are prompts given either before or during a patient encounter that suggest a specific behavior should or should not be performed.

An injection safety poster in Swaziland.

How are reminders used in health care?

Reminders can include:

- a note in a patient’s chart;
- a message appearing on a computer screen;
- a verbal cue from an assistant; or
- a checklist, wall poster, flowchart, or other paper- or computer-based job aid that guides the health provider through the appropriate steps in a process.

Several systematic reviews have concluded that reminders have been proven effective in increasing provider adherence to preventive care standards and prescribing guidelines. The effects of reminders often disappeared after the reminders were stopped; suggesting that to be effective, reminders must be applied continuously and incorporated into daily routines.

Job aids are a type of reminder that have been widely used in developing country settings, especially with non-physician health workers. Job aids are visual tools used by the provider during a health care activity that give direction on what actions to take and how. The purpose of the job aid is to reduce the amount of recall needed to correctly perform the task. Job aids are thought to be most appropriate when provider forgetfulness or lack of recall is an important barrier to performance, such as when the task to be performed is complex or infrequent.

Several studies from the USAID Quality Assurance Project in Niger, Uganda, and Zambia have found that job aids could be feasible and effective in hospital, primary care and community settings to prompt health workers to perform key tasks or communicate specific messages during patient
counseling In addition, job aids can contribute to help shift tasks from higher skilled to lower skilled health workers. The QAP Issue Paper, "The use of manual job aids by health care providers: What do we know?" provides a good overview of evidence related to effective use of job aids.

Standards and Evidence-based Guidelines

What are standards and evidence-based guidelines?

Standards communicate expectations for how a health care worker should perform a particular health care activity. They define, for both health workers and clients, the ingredients needed to produce quality services and outcomes. Standards are thus the cornerstone of most health care improvement approaches, including accreditation and other forms of external quality evaluation, collaborative improvement, and process improvement.

There are different forms of standards, including: procedures, clinical practice guidelines, treatment protocols, critical paths, algorithms, standard operating procedures, or statements of expected health care outcomes.

Standards are most effective if they are:

- **Regularly updated, communicated to providers, and are “evidence based”**: In an evolving field such as health care – where new technologies, drugs, and procedures are continuously developed and an enormous body of scientific evidence is available to support clinical decision-making – it is critical to ensure that standards are regularly updated, communicated to providers, and are “evidence-based” to improve health care effectiveness and outcomes. Adherence to evidence-based standards is associated with improved health outcomes. Moreover, failure to provide clinical care in accordance with standards has serious negative effects on patient outcomes.

- **Clearly written, achievable, and available to health workers**: Many areas of health care have international evidence-based standards, including standards adapted to
low-resource settings. For example, the U.S. Government’s National Guideline Clearinghouse is a comprehensive, open-access database including over 2100 evidence-based diagnostic, surgical, and treatment guidelines, over 2000 disease or condition-related practice guidelines, and over 1400 drug-related guidelines.

- **Locally appropriate and reflect both the expected competencies of health care providers in that setting as well as the equipment, drugs, and supplies available to them.** But even when locally appropriate, evidence-based standards exist, health workers may not follow them routinely.

**Why is standards-based performance difficult to achieve and sustain?**

A substantial body of research on guidelines implementation suggests many reasons why standards-based performance is often difficult to achieve and sustain. At the most basic level, health workers may simply not be familiar with standards because these have not been clearly communicated. In other cases, systemic factors such as lack of the necessary supplies or equipment to perform according to standards; delayed dissemination of standards from national to facility levels; poor monitoring and evaluation of guideline implementation; and lack of human resources can affect implementation of standards. **Motivating and enabling health workers to perform according to standards** is thus one of the biggest challenges to producing quality health care.

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**Supervision**

**What is supervision?**

Supervision is the process of directing and supporting staff so that they may effectively perform their duties. Supervision may include periodic events, such as site visits or performance reviews, but it also refers to the ongoing relationship between a staff member and a supervisor. There is also an important human dimension to the supervisor-health worker relationship. In low-resource settings, where many health providers work alone or in small groups in remote sites, the supervisor may be the only link to the larger health system.

A health worker's belief in her ability to succeed in her job and good relations with her supervisor are among the key drivers of employee engagement.

In health care settings, supervision often includes oversight and implementation of clinical and non-clinical tasks and activities that affect the organization, management, and technical delivery of health services. Supervisors may supervise work processes and systems, maintenance of facilities and infrastructure, and monitoring and improvement of system-wide performance.

**How does supervision improve health care quality?**

Supervision has traditionally been viewed as a key approach to improving the quality of health care...
and the performance of health care providers, especially given the labor-intensive nature of health service delivery. This is particularly true in developing countries, where supervision remains one of the most direct ways for an organization to affect what its staff does. At the same time, adequate supervision is frequently not realized or sustained, and many supervisors lack the knowledge, skills, and tools for effective supervision.

Governments and donors have invested significant resources to strengthen supervision systems in low- and middle-income countries through supervisor training and supervisory tools and checklists. The Government of South Africa, for example, has made primary health care supervision as cornerstone of the national health care system. The Department of Health’s [Primary Health Care Supervision Manual](https://www.usaidassist.org) contains guidelines for quality supervision, use of supervision support checklists, conducting in-depth technical program reviews, and tools for working with Primary Health Care Facility Committees.

International health agencies have reached consensus in recent years about the key functions of supervision: setting objectives, providing training and guidance, monitoring and evaluating performance, providing feedback, motivating staff, and providing support to solve problems. At the same time, a growing body of experience from different settings suggests that broadening and enhancing how supervision functions can be performed—by involving health workers themselves, peers, and even communities. Evidence suggests that these alternative approaches achieve better health worker performance and outcomes than traditional supervisory approaches, and some evidence indicates that these approaches may be more sustainable.

### Training

Health care professionals need to engage in educational opportunities in order to give them up-to-date knowledge and skills. **Continuing medical education (CME)** in the form of in-service training (IST) for physicians, nurses, and other health care workers has traditionally employed short courses, conferences, seminars, medical rounds, small group sessions, workshops, tutorials, and other didactic methods to transfer clinical and other information to individuals and groups.

Numerous reviews, drawing primarily on studies in North America, have concluded that formal CME without support to enable or reinforce standards-based performance in actual practice has little or no impact on provider performance. However, when training events were complemented by other interventions to reinforce compliance, performance improvements were more likely to be demonstrated.

Training on maternal care in Uganda.

Despite the accumulated evidence pointing to the lack of effectiveness of traditional didactic training, expert-led teaching still prevails as the most common form of CME in developing as well as developed countries. However, the influence of adult learning theory on undergraduate and postgraduate medical education has recently resulted in increased interest in and application of
experiential learning methods and alternative educational formats. These include inter-professional education, small group learning, learning contracts, telemedicine, and using the Internet to link isolated providers with university resources. For example:

- **Problem-based learning** emphasizes the study of clinical cases in small discussion groups, collaborative independent study, and the application of deductive reasoning as opposed to mastery of factual knowledge. Problem-based learning enhances the transfer of concepts to new problems, increases interest in the subject matter, and develops self-directed learning skills.
- **Computer-based training (CBT)** Computer-driven, interactive video can portray simulated real-life clinical scenarios that students experience in a setting that threatens neither the student nor the patient. CBT can also give students a “clinical” context to enhance recall later in actual clinical practice settings. Computers also have the advantage over traditional training of allowing self-pacing and repetition by individual learners.

USAID has invested considerable resources in improving the quality of IST for health care providers. The Human Resources for Health Global Resource Center offers extensive resources related to education and training of health workers, covering continuing education, distance education, in-service training, pre-service education, and training methodologies. The Global Improvement Framework for Health Worker In-service Training provides guidance to training program providers, professional associations and regulatory bodies on what practices are important to improve sustainability, effectiveness and efficiency of IST to develop and maintain health worker competencies. A related tool is the Training Evaluation Framework and Tools (TEFT) developed by I-TECH to help evaluators, implementers, and program managers at all levels plan successful evaluations of in-service training program outcomes.

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