

Human resources

Tenet 5: Human resource policies provide immunization supply systems with adequate numbers of competent, motivated, and empowered personnel at all levels of the health system to overcome existing and emerging immunization supply challenges.

The visioning process

Over the course of 2010 and 2011, partners have joined forces to develop a shared, long-term vision for immunization supply and logistics systems and technologies. The goal of this vision is to guide key stakeholders at country, regional, and global levels in their work to strengthen supply and logistics systems. This process is being facilitated by project Optimize, a collaborative project of the World Health Organization and PATH.

The following proposed characteristics serve as working hypotheses to describe the desired future state of human resources (HR):

- *Personnel:* Creativity, initiative, and versatility are key factors for performance.
- *Policies:* Specific HR policies develop, recruit, retain, and motivate the necessary workforce of logisticians and the logistics competencies of other health personnel. Recognition, job and development opportunities, salaries, and variety are achieved through appropriate policies.
- *Competency:* Competent personnel meet an agreed upon competency framework as doctors, nurses, or pharmacists.
 - A global competency framework serves both integrated supply systems and vertical supply chain logistics.
 - Sustainability requires synergies between immunization system management and other logistics functions.
- *Motivation:* This is a prerequisite for performance and sustainability and is critical for staff retention.
 - It is important to have resources (equipment, facilities, organization, and procedures) to operate with a minimum level of performance; one single missing link spoils the incentive for involvement and initiative.
 - Supervision is necessary to ensure high staff performance through compliance checks and on-site training on the one hand, and on the other hand to



Landscape analysis focus areas

- Global context
- Human resource policies
- Competency frameworks
- Regional initiatives
- Country-specific initiatives
- Other human resource initiatives

The vision

By 2020, state-of-the-art supply systems meet the changing needs of a changing world in order to enable the right vaccines to be in the right place, at the right time, in the right quantities, in the right condition, at the right cost.

For more information

PATH

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sensitize staff members on the importance of what they are doing. Hence it is also a guardian for motivation.

- *Other characteristics:*
 - Adequate number: The capacity to build up and retain a workforce of supply chain managers in sufficient numbers is a critical factor for success.
 - Empowerment: Supply chain management (SCM) staff have influence on HR and health system decisions. They process relevant data, inform decisions, and adjust the implementation process.
 - Every level: The closer the last mile, the more important are multitasking, flexibility, and adaptability. It is important to have a local competency framework with the right mix of specialization versus versatility.

Landscape analysis

The landscape analysis of the efficiency of immunization information systems was conducted to better understand the work underway by all global stakeholders in this area. In order to meet global public health goals—including the Millennium Development Goals for improving maternal health, reducing child mortality, and combating HIV/AIDS, malaria, and other diseases—efficient public health supply chains are key, as is the role of the supply chain manager or logistician. This landscape analysis defines goals, identifies gaps that need to be addressed to achieve them, and serves as a call to action engaging key stakeholders to increase both the supply and demand for professional public health supply chain managers and logisticians.

Preliminary gaps

The goal of the landscape analysis was to identify gaps that need to be addressed to realize the vision of future immunization supply systems. The preliminary gaps identified are as follows:

- *Recognition and motivation:* Supply chain managers are currently not considered a critical factor of success for health operation and lack recognition and incentives. The need for improved logistics expressed at the district/peripheral level is not seen as a priority at the central/national levels. There are few champions for this field that often remains marginal in most international meetings. Contrary to other technical areas, there is no clear evidence demonstrating the benefits of recognition and incentives in terms of savings and improved staff performance. Furthermore, initiatives promoting the professionalization of supply chain managers often raise concerns on the part of some health workers, such as pharmacists, district administrative officers, and others. In such a context, the poor performance of SCM systems further reduces staff motivation—not only among supply chain managers but among all health care personnel.
- *Competence:* In developing-country public health systems, SCM competencies are not subject to a consensus similar to competency frameworks of other health professionals such as pharmacists or nurses. One of the consequences is that SCM does not have an outline of the profession's key characteristics, notably pre-service training and adequate certifications that are entry points for newcomers and provide recognition and career opportunities. In addition, the individual's capacity to adapt to new models and technologies is limited. Cross-cutting competency frameworks for SCM have been developed that could benefit integrated logistics as well as other areas, but they have not been implemented in developing countries to date. Finally, training opportunities are scarce and have limited impact on the individuals actually in charge of logistics.
- *Numbers:* There are few positions to meet the needs of SCM and logistics and even fewer people to fill the existing positions. A critical mass of trained supply chain managers would be necessary to

address most of the gaps listed here, and to serve as a reference for other health workers in charge of logistics functions, however such a cadre does not currently exist. As a result, it is difficult to find the right individuals to fill positions in the immunization supply systems at all levels. Worse, the closer one gets to peripheral level, the less attention is dedicated to SCM. As a result, last-mile logistics are always a challenge.

- *Synergies*: Health programs are too compartmentalized (split into “silos”) to make the best use of the limited available human resources. For example, the GAVI Alliance has no capacity-building program in supply chain management, whereas such a program exists at the Global Fund to Fight AIDS, Tuberculosis and Malaria. At the district/peripheral level, there are often not enough people able to deal with logistics challenges. This is even truer with respect to creating synergies between private and public sectors. Finally, there is a dire lack of networks that would enable individuals in charge of logistics and professional supply chain managers (in public and private sectors) to share experience and learn from each other.

Landscape analysis summary table

By 2012, the vision statement will reflect evidence found through the following landscape analysis and other analyses. For more information on this landscape analysis, please contact optimize.who@path.org.

Vision of future immunization supply and logistics systems: Core tenets

1. Vaccine products and their packaging are designed with characteristics that best suit the needs and constraints of countries.
2. Immunization supply systems are designed to maximize effectiveness, agility, and integration with other supply systems, and to support continuous system improvement through learning, innovation, and leveraging synergies with other sectors.
3. The environmental impact of energy, materials, and processes used in immunization supply systems from the international to local levels is assessed and minimized.
4. Immunization information systems help staff plan and manage immunization activities and resources while ensuring that adequate quantities of vaccines are always available to meet demand.
5. Human resources policies provide immunization supply systems with adequate numbers of competent, motivated, and empowered personnel at all levels of the health system to overcome existing and emerging immunization supply challenges.

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Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Global context	Global shortage of health workers, brain drain stress developing countries jama.ama-assn.org/content/298/16/1853.full	WHO	A worldwide shortage of health care workers, coupled with a disproportionate concentration of health workers in developed nations and urban areas, stands in the way of achieving key public-health priorities such as reducing child and maternal mortality, increasing vaccine coverage, and battling epidemics such as HIV/AIDS.	Global	health workforce by density
Global context	Global Health Workforce Alliance www.who.int/workforcealliance	Global Health Workforce Alliance	The alliance provides tools to devise and implement HR strategies that can benefit SCM.	Global	policies
Global context	Health logistics is a profession: improving the performance of health in developing countries http://factsreports.revues.org/index109.html	Bioforce Institute, Agence de Médecine Préventive (AMP)	This assessment of HR in logistics was conducted in 2005–2006 by the Bioforce Institute with technical support from AMP. The evaluation focused on five French-speaking African countries representing various samples of the AFRO Region: Benin, Burkina Faso, Chad, Democratic Republic of Congo, and Madagascar. This study, as well as many others, shows that the global crisis affecting health workers is even more severe when it comes to personnel taking care of logistics functions. Within health systems, SCM has a major impact on delivery and the sustainability of programs and structures.	Benin, Burkina Faso, Chad, Democratic Republic of Congo, Madagascar	health personnel qualifications
HR policies	The Capacity Project www.capacityproject.org/hris	USAID	The Capacity Project (2005 to 2009) developed open-source solutions (HR information systems) to supply health-sector leaders and managers with the information they need to assess HR problems, plan effective interventions, and evaluate those interventions. The follow-on global project, CapacityPlus, builds on the human resources information system strengthening work initiated by the Capacity Project.	Global	capacity reinforcement
HR policies	Humanitarian Logistics Association www.humanitarianlogistics.org www.humanitarianlogistics.org/news/wise-humanitarian-logistics-a-career-for-women	Humanitarian Logistics Association	The Association is an individual membership association for humanitarian logistics professionals committed to increase humanitarian logistics effectiveness. The Association and the Women’s Institute for Supply Chain Excellence offers “Humanitarian Logistics: A Career For Women,” a collection of experiences and impressions of supply professionals and logisticians.	Global	career
HR policies	Human Resources Development: The Challenge of Health Sector Reform info.worldbank.org/etools/docs/library/206833/DussaultHRD.pdf	World Bank	This 1999 review of human resources development describes how efficiency increases when a productive work organization is in place which requires an appropriate mix of personnel, good management, and appropriate incentives. This raises the question of what can be done to ensure that sector reform will be facilitated by a workforce with the competencies and tools required; with adequate numbers and mix of skills; distributed geographically and among levels of care and types of institutions and services; and with sufficient motivation and commitment. A review of qualified and unqualified health personnel as well as a complete restructuring of the health task-force structure should be performed urgently. The availability of a “skills mix” health task force is an appropriate answer to the scarcity of the health task force in low-income countries.	Global	health task force restructuring
Competency frameworks	Professional Development Opportunities for Public-Sector Reproductive Health Commodity Managers	Gregory Roche, Jennifer Antilla, Erin Hasselberg, Sylvia Ness	“Competency framework” refers to SCM functions or other health functions in a profession. In both cases, SCM is rarely described as related to a specific training and referred qualifications. “Professional Development Opportunities for Public Sector Reproductive Health Commodity Managers,” Section V on “Workforce Development” specifically addresses this HR issue. In low-income countries, logisticians charged with implementing, maintaining, or improving commodity management systems typically attain their jobs by rising through the ranks even when they are minimally qualified or minimally trained.	Global	professionalization
Competency frameworks	HR development for SCM in public health www.technet21.org/index.php/documents/view-document-details/1036-human-resource-development-for-supply-chain-management-in-public-health.html	Optimize	The need to professionalize the public-health logistician position is increasingly recognized but yet to be implemented at a significant scale. Frequent supply chain system breakdown and poor performance demonstrated by poorly maintained information systems and product stockouts are due to a lack of professional supply chain managers. The supply chain tasks are performed by individuals who are not trained to fulfill those tasks.	Global	professionalization

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Competency frameworks	Health logistics is a profession: improving the performance of health in developing countries http://factsreports.revues.org/index109.html	Bioforce Institute, AMP, WHO/AFRO, UNICEF, USAID DELIVER, other partners	A competency framework for health logisticians has been established by the Bioforce Institute with the support of AMP and other partners and has been further refined to reach a regional consensus after two seminars organized by WHO/AFRO and UNICEF with the strong involvement of several African countries and USAID DELIVER. This framework is composed of seven core competences: 1. Plan logistics of health structures and programs. 2. Administer and coordinate logistics of health programs and structures. 3. Manage the supply chain. 4. Coordinate the use and maintenance (including subcontracting) of medical and technical equipment. 5. Coordinate the maintenance of facilities and housing, including water and sanitation of health structures. 6. Ensure effective logistical support of health emergencies and humanitarian operations. 7. Foster intersectoral collaboration and community participation.	Africa	health logisticians
Competency frameworks	Supply Chain Manager Job Profile www.cvtips.com/career-choice/supply-chain-manager-job-profile.html	CV Tips	Managing the supply chain refers to strategies and processes of global tactical planning to ensure the availability of commodities. Supply chain managers have abilities in handling complex activities and tasks. Key elements of the role include: • Maintaining product availability. • Managing category stock budget. • Developing reports to ensure targets are met. • Managing the import process. • Working cross-functionally to improve supply chain efficiencies. • Supporting systems development.	Global	supply chain managers
Competency frameworks	Health logistics www.bioforce.asso.fr/IMG/pdf/RAPPORT-FINAL-ATELIER-CONSENSUS-FORMATION-LdS-KIN-MAI_2010.pdf	Bioforce	The health logistics field deals with the management of material resources essential to the quality and efficiency of health activities within programs and structures. It calls for managerial skills and techniques related to supply chain, facility management, and health operations.	Global	job descriptions
Competency frameworks	Capacity Development Plan	Zambia Ministry of Health	Job descriptions are often based on the international initiatives for health, rarely on a national analysis of health systems. For example, the Zambia Ministry of Health has developed the Capacity Development Plan to strengthen its capacities to take over the Global Fund Principal Recipient role in 2010 to 2011. The plan covers the following areas: 1) program management; 2) sub-recipient management; 3) financial management; 4) procurement and supply chain management; and 5) monitoring and evaluation. The capacity development specialist is expected to facilitate capacity development and institutional strengthening in the Ministry of Health following the activities and milestones set out in the plan.	Zambia	job descriptions
Competency frameworks	Health logistician institutional training curriculum www.bioforce.asso.fr/IMG/pdf/referentiel_d_emploi_du_logisticien_de_sante.pdf	WHO, UNICEF, AMP, Fondation Merieux, USAID DELIVER	A standard job description for the health logistician has been adopted during AFRO Regional seminars.	Africa	job descriptions
Competency frameworks	Development of the Transport Management Qualification in South Africa Transaid 2002 report and, "Development of a transport management system guide for self directed learning," Transaid 2009. Transport Management: A Self-Learning Guide for Local Transport Managers of Public Health Services http://deliver.jsi.com/dlvr_content/resources/allpubs/guidelines/TMS_Guide.pdf	Transaid	In South Africa, a clear description of the fleet manager position includes daily tasks such as fleet vehicle management, customs clearance, and supply transport. No dedicated staff is in charge at the health structure level.	South Africa	job descriptions

Vision of future immunization supply and logistics systems: Tenet 5 landscape analysis summary—Human resources

Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Competency frameworks	Bioforce certifications www.bioforce.asso.fr/spip.php?rubrique70 www.bioforce.asso.fr/spip.php?rubrique36 www.bioforce.asso.fr/spip.php?rubrique37 <i>French language</i>	Bioforce	Bioforce offers diploma and short courses on Humanitarian and Health Logistics, in French and English, in Europe and Africa. Certification can also be obtained through recognition of prior learning. In West Africa, Bioforce is implementing a Francophone subregional SCM course based on the USAID DELIVER materials, similar to the Anglophone course by ESAMI and the course given in Spanish by PRISMA. In the aid community, Bioforce is considered a leading institution on logistics training and for its achievements in moving from HR field assessments to competency frameworks and job descriptions (four professions to date).	Africa, Europe	human resource networks, training and certifications
Competency frameworks	Chartered Institute of Purchasing and Supply www.cips.org/en/trainingevents	Chartered Institute of Purchasing and Supply	The institute is dedicated to promoting good practice. It offers a wide range of courses in the United Kingdom and has been a reference for Kenya.	United Kingdom	job descriptions
Competency frameworks	ESAMI www.esami-africa.org/index.php?option=com_content&view=article&id=110&Itemid=124	ESAMI	A learning institution partnering with USAID DELIVER to offer SCM courses.	Eastern Africa, Southern Africa	human resource networks, training and certifications
Competency frameworks	Fritz Institute www.fritzinstitute.org/programs.htm	Fritz Institute	The Institute implements the Logistics and Supply Chain Solutions program to bring best practices, training, and resources to humanitarian logistics.	Global	human resource networks, training and certifications
Competency frameworks	Global Effective Vaccine Management Initiative www.who.int/immunization_delivery/systems_policy/EVM-background.pdf	WHO, UNICEF	EVM is developed by WHO and UNICEF to help countries improve the quality of their vaccine and cold chain management from the time the vaccine arrives in their country down to the service delivery point. EVM integrates learning from the former Effective Vaccine Store Management Initiative, used to assess the national or state vaccine stores, and the Vaccine Management Assessment Tool, used to assess levels below the national and state levels. The EVM package can be used as an assessment tool for analysis of the strengths and weaknesses across the supply chain and also as a supervisory tool. A follow-up EVM assessment should be conducted again after about two years. Thus it is a multifaceted capacity-building activity, targeted at strengthening the vaccine management system in order for it to become self-sustainable.	Global	human resource networks, training and certifications
Competency frameworks	Humanitarian Logistics Association certification www.humanitarianlogistics.org/about-hla/certification	Humanitarian Logistics Association	This individual membership association for humanitarian logistics professionals offers the Certification in Humanitarian Logistics.	Global	human resource networks, training and certifications
Competency frameworks	International Association of Public Health Logisticians my.ibpinitiative.org/public/Default.aspx?c=ca7f45ec-3b4a-400f-a055-b19ed8771066	John Snow, Inc., USAID DELIVER	The International Association of Public Health Logisticians is a community of practice dedicated to facilitating the exchange of professional experiences and innovations in the areas of public health logistics management and commodity security, supporting continued learning, promoting the use of local and regional expertise, and expanding members' professional network.	Global	human resource networks, training and certifications
Competency frameworks	John Snow Inc. www.jsi.com/JSIInternet/ www.jsi.com/JSIInternet/Projects/ListProjects.cfm?Select=Topic&ID=10&ShowProjects=No www.deliver.jsi.com/dlvr_content/resources/allpubs/logisticsbriefs/ZM_WherRoadEndLogCont.pdf	John Snow, Inc.	John Snow, Inc., is a global actor on health programs and logistics and implements various programs in the USAID DELIVER PROJECT. For example, the project works in all of Zambia's provinces to improve access to health commodities. USAID DELIVER is partnering with Zambia's Ministry of Health to help bring drugs and medical supplies to patients by strengthening the supply chain. In the Western Province, the project trains health center staff in logistics and provides technical guidance and mentorship to Ministry of Health staff in provinces and districts and at individual health centers.	Global	human resource networks, training and certifications

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Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Competency frameworks	Logistics Learning Alliance www.logisticslearningalliance.com/programmes/humanitarian-sector	Logistics Learning Alliance, Fritz Institute, Chartered Institute of Logistics and Transport	In conjunction with the Fritz Institute and the Chartered Institute of Logistics and Transport, the Logistics Learning Alliance offers a certification in humanitarian logistics, certification programs, and shorter skills development programs developed with World Food Program, Oxfam, UNICEF, Médecins Sans Frontières (MSF), and Save the Children.	Global	human resource networks, training and certifications
Competency frameworks	Global Mid-level Management modules www.who.int/immunization_delivery/systems_policy/training/en/index1.html	WHO	This new series of modules on immunization training for mid-level managers replaces the last version which was published in 1991. The modules aim to provide the immunization manager with up-to-date technical knowledge, explain how to recognize management/technical problems and take corrective action, and how to make the best use of resources. Each module is organized around a series of steps in which technical information is followed by learning activities.	Global	human resource networks, training and certifications
Competency frameworks	Médecins Sans Frontières Logistique www.msflogistique.org	Médecins Sans Frontières	This organization described as “one of the supply centres for Médecins Sans Frontières (MSF) [that] supplies MSF missions with medication and equipment for ongoing programs and emergency actions.” MSF Logistique handles all the roles in the supply chain from purchases to goods transportation. Recent discussions highlight a few points: synergy between health supply and general purpose supplies, emphasis on the cold chain, and synergy between different professions (logistics, SCM, hospital maintenance). The need for high-level specialists in the field is described as a “tidal wave,” considering the increasing complexity of systems such as supply chain managers, communication, energy, and cold chain equipment. But this trend is linked more to the challenge of dealing with emergencies than with capacity-building of local supply systems.	Global	human resource networks, training and certifications
Competency frameworks	National University of Nicaragua www.cies.edu.ni	National University of Nicaragua	This university offers training and certification sessions in community and public health.	Nicaragua	human resource networks, training and certifications
Competency frameworks	Network for Education & Support in Immunisation www.nesi.be/en/default.php	Network for Education & Support in Immunisation	The network is dedicated to improving the quality and sustainability of immunization programs and services in low- and middle-income countries, in particular through education and training.	Global	human resource networks, training and certifications
Competency frameworks	PRISMA deliver.jsi.com/dhome/topics/organizational/osscom www.prisma.org.pe/	PRISMA, John Snow, Inc.	PRISMA, a Peruvian NGO, offers comprehensive courses on supply chain management topics.	Peru	human resource networks, training and certifications
Competency frameworks	Reproductive Health Supplies Coalition www.rhsupplies.org/working-groups/systems-strengthening/professional-development-of-supply-chain-managers.html	Reproductive Health Supplies Coalition, USAID/supply chain logistics	The Reproductive Health Supplies Coalition hosts a very active work stream on professionalization of SCM. This initiative has achieved great success in cutting across programs to promote the professionalization of supply chain managers. It has generated a white paper, a literature review on the topic, and tools for an HR in-country survey. The initiative will organize a major international conference at WHO headquarters on June 28 and 29, 2011.	Global	human resource networks, training and certifications
Competency frameworks	University of Sydney sydney.edu.au/business/itls/courses/transport_and_logistics	University of Sydney	This university offers a comprehensive program on logistics.	Global	human resource networks, training and certifications
Competency frameworks	United Nations Development Programme www.undp.org/procurement/training.shtml	United Nations Development Programme	UNDP offers several logistics courses including a three-day course on SCM in humanitarian organizations and a global competency framework.	Global	human resource networks, training and certifications
Competency frameworks	World Trade Organization gtad.wto.org/project.aspx?prjCode=INT/61/105A	World Trade Organization	The World Trade Organization implements an SCM training and professional certification with a spread of 100 countries and specific networks, LearningNet and global portal. It aims to be the leader in supply chain management training issues for developing countries.	Global	human resource networks, training and certifications

Vision of future immunization supply and logistics systems: Tenet 5 landscape analysis summary—Human resources

Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Regional initiatives	AFRO Region Initiative	WHO, UNICEF	WHO, in participation with UNICEF, has been very active in efforts to strengthen the HR of immunization supply systems. The WHO/AFRO initiative takes a bottom-up approach, starting at the health facilities and district while taking into account the supply chain management continuum, providing the basis for a sustainable health system where programs can be implemented, instead of a top-down approach based on international health programs. This initiative also has a fundamental emphasis on synergies between various technical fields and communities, including dealing with the private sector and local communities.	Africa	synergies
Regional initiatives	Applying cultural understanding and local ways of learning in the development of pharmacy competencies in Pacific Islands Countries Andrew Brown, Discipline of Pharmacy andrew.brown@canberra.edu.au	University of Canberra	A review has been performed to determine a set of guiding principles to apply cultural understanding and local ways of learning to the development of pharmacy competencies in Pacific Island countries. With pharmacy technician training being fragmented, historically based on western traditions, and without formal involvement from universities, a culturally based approach to training was sought as a starting point for improvement. The aims of the three-year strategy are to improve availability of essential medicines in Pacific Island country clinics and demonstrate improved competencies in the areas of essential medicine supply in the pharmacy technician cadre.	Pacific Islands	competencies
Regional initiatives	Proposed Harmonized Curriculum for the Training of Pharmacists in Anglophone West Africa	West African Health Organisation	With this program, the West African Health Organisation aims to produce pharmacy practitioners with the knowledge, skills, and attitude to provide comprehensive pharmaceutical services.	Western Africa	harmonized curriculum
Regional initiatives	Profile of Human Resources for Health in Ten Countries in the Asia and Pacific region www.hrresourcecenter.org/node/3290	Human Resources for Health Knowledge Hub, Burnet Institute	This profile provides benchmarks that can be applied to SCM. The report summarizes the available information on the cadres working at the community level in each country, their diversity, distribution supervisory structures, education, and training. A general human resources for health plan should include: strengthening leadership and management, improving availability, improving quality and ensuring equity, improving workforce size and identifying gaps, improving categories of staff, upgrading staff mix and staff distribution, improving supervision structures to allow a lower-level task force to perform more tasks, using mobile teams to improve the services available at health centers, and offering greater financial incentives for staff in remote areas.	Bangladesh, Cambodia, Fiji, Indonesia, Laos, Papua New Guinea, Philippines, Solomon Islands, Timor Leste, Vanuatu	cadres
Regional initiatives	Regional Technical Resource Collaboration tool to assist countries to assess their pharmaceutical workforce	Bill & Melinda Gates Foundation, USAID (Kenya, Rwanda, Tanzania, Uganda) and WHO EMP in collaboration with WHO Department of Human Resources for Health (WHO/HRH)	The Regional Technical Resource Collaboration for Improving the Use of Medicines East Africa is a regional collaborative initiative for capacity-building in pharmaceutical management. Regional human resources are pooled to address common pharmaceutical supply management challenges, resources saved by working together on cross-cutting interventions, and capacity-building activities are linked with specific national needs and initiatives. From each region, 15 public health facilities and 15 private facilities, including 5 pharmacies, were both randomly and purposely selected. HR managers and other senior officials at the Ministry of Health, Pharmacy Council, hospitals, health facilities, pharmaceutical industries, and pharmacy schools were interviewed on their personnel data using various questionnaires. In addition to administrators, individual pharmacists working in the visited facilities were also interviewed.	Kenya, Rwanda, Tanzania, Uganda	assessment of health workforce
Regional initiatives	Task Force on Immunization in Africa / Regional Committee of Health Ministers	WHO Regional office for Africa, WHO/HRH, Bioforce	The Task Force on Immunization in Africa (now the African Regional Conference on Immunization or ARCI) has published several strong recommendations on health logistics. For example, Maputo (2006): "Given the recognized need for health logistics officers at district level and the present lack of such officers in the countries, WHO/AFRO, Bioforce and partners should urge countries to create positions of health logistics officers in district health management teams, coordinate their efforts and mobilize necessary resources to initiate adequate training in logistics for health in support of present move toward greater integration of public health interventions." Ouagadougou (2010): "To strengthen logistic and delivery of vaccines, the conference suggested that WHO and partners consider introducing for discussion a document on the creation of logisticians for health during the Regional Committee of Health Ministers." Dr. Djona Avocksouma, AFRO HRH, has formulated a strategy to support the creation of a professional workforce of health logisticians.	Africa	training initiation

Vision of future immunization supply and logistics systems: Tenet 5 landscape analysis summary—Human resources

Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Regional initiatives	The World Bank www.who.int/hiv/amds/SupplyChainManagement.pdf	World Bank	The World Bank has implemented SCM training programs, for example in Lebanon in 2005.	Global	training
Country-specific initiatives	Rural Expansion of Afghanistan's Community-based Healthcare	USAID, MSH	REACH supports the expansion of the Basic Package for Health Services in 14 provinces in Afghanistan through a granting mechanism to national and international NGOs that implement health services in 14 provinces of Afghanistan. Reach Drug Management Officers have also provided technical assistance to the grantee NGOs in the field of drug supply management and on-the-job training in the rational use of drugs. By December 2005, the drugs supplied by REACH were used by the grantee NGOs in 326 health facilities and more than 5,000 community health workers with the necessary drugs to implement the Basic Package for Health Services in 14 provinces in Afghanistan. In order to obtain a clear end-of-project status of the drug supply management capacity of the REACH grantee NGOs, a formal assessment has been implemented for each NGO and each grant, both at the warehouse/headquarters level and health facility level.	Afghanistan	drug supply management
Country-specific initiatives	Strengthening Pharmaceutical Systems	USAID, MSH	MSH is addressing supply chain management issues for reproductive health commodities. MSH is currently assisting the Directorate General of Family Planning to develop a strategic framework for capacity-building in procurement and supply chain management. As part of this work, MSH is seeking local partners to assist in sustainable capacity development in technical knowledge and skills on procurement and supply chain management. A survey and review have been conducted by MSH in Bangladesh to analyze and characterize structures and processes and selected national institutions and organizations as related to procurement and supply chain management.	Bangladesh	reproductive health commodities
Country-specific initiatives	Mission report: "Evaluation des besoins de formation en logistique médicale au Tchad" (Assessment of training needs in medical logistics in Chad)	Bioforce	A 2005 mission report in Chad indicates that at regional and district levels, nurses and doctors without any specific logistic skills have multi-task responsibilities including drug distribution and administrative data reports. At hospital level, non-specialized workers such as electricians are trying to manage water and sanitation aspects as well as cold chain equipment maintenance. A great lack of competencies and a very low level of expertise regarding computer tracking namely for data registration, statistics updating, and equipment/drugs in/out storage and distribution recording, are prevailing in Chad. Consequences related to lack of qualified personnel refer to the strong difficulties to manage the logistics planning cycle and ensure reliable payment conditions. Recommendations refer to adapting short-term training sessions to health personnel inside health facilities; securing financial support on a continuum strategy, and reinforcing competences of health personnel.	Chad	lack of competencies and consequences
Country-specific initiatives	Assessment of Human Resources for Pharmaceutical Services in Ghana www.hrresourcecenter.org/node/3270 www.who.int/medicines/areas/coordination/ghana_assessment_hr_pharmaceutical_services.pdf	Pharmacy Council, Ghana Ministry of Health	This report is a preliminary assessment of the pharmaceutical workforce in Ghana. There has been a steady increase in the number of pharmacists on the Pharmacy Council register from 2006 to 2009. The proportion of pharmacists in the register practicing in the country over the same period increased from 55% to 62%. This indicates a gradual increase in pharmacist retention, due to the introduction of new pharmacy programs in universities. Most pharmacists (75%) work in the private sector. This calls for effective private-public sector cooperation for effective pharmaceutical care delivery for the population. There has also been a recent upward adjustment of salaries in the public sector. The public sector has more clearly defined career progression than the private sector. This apparent stagnation in salary scale for pharmacists in private sector is a risk to retention in that sector.	Ghana	assessment of health workforce

Focus area	Project/concept/publication	Partners involved	Description	Locations	Keywords
Country-specific initiatives	Access to essential drugs in Guyana: a public health challenge onlinelibrary.wiley.com/doi/10.1002/hpm.949/pdf	Ohio State University, University of Massachusetts	<p>A study conducted to identify main barriers to drug access proposes alternatives to strengthen Guyana's public health functions. Specific attention has been on focusing supervision to measure human resources capacity and detail gaps and solutions, as well as scope of practice which is not well documented. Regarding midwives, it includes the detection of obstetric complications, health counseling, and education. Recommendations refer to the urgent need of clarification of roles and job descriptions for each category of the health task force.</p> <p>According to the 2009 Health Sector review, around 50% of health centers received at least one supervisory visit from the Provincial Health Office in 2008. The qualifications and motivation of different cadres of private providers are widely different, and interventions to improve their performance have to deal with such diversity. Key points of the review of private health worker performance in low-resource settings have pointed out that performance should be improved and monitored.</p>	Guyana	job descriptions
Country-specific initiatives	Health Worker Recruitment and Deployment Process in Kenya: an Emergency Hiring Program www.hrresourcecenter.org/node/2161	The Foundation for effective HR management—HSLP Institute HR mapping of health sector in Kenya	<p>Available data identify high unemployment of health professionals, while on the other hand only 50% of posts are filled. Moreover, some regions are underserved, which could explain why AIDS patients do not receive antiretroviral care. In order to find a solution, an emergency plan is ongoing but without identifying gaps in the supply chain, which is a clear factor of inadequate health personnel management, supervision, and training.</p> <p>Part of SCM is related to procurement and supply. In order to measure role and specific competence capacity, a study was conducted on the function of procurement. The purpose of the study was to measure the perception of procurement professionals about the status of the profession. The concern is whether procurement is a worthwhile lifelong career. Results indicate that to raise the status of the profession, a national certification exam for entrants into the profession is the most important factor.</p>	Kenya	certification, professionalization
Country-specific initiatives	Procurement professional training and certification	Chartered Institute of Purchasing and Supply UK—Kenya Institute of Supplies and Management (KISM)	<p>In order to measure role and specific competence capacity, a study was conducted regarding the function of procurement. To ensure professionalization of the procurement system in Kenya, a professional entry exam is required such as the envisaged Certified Procurement Professional of Kenya. Most of the current procurement practitioners have undergone postgraduate diplomas offered by the Chartered Institute of Purchasing and Supply in the United Kingdom. The government training institutes of Kenya and other examining bodies have also contributed to a pool of trained procurement professionals. The Kenya Institute of Supplies and Management has incorporated SCM into its professional development program. The program leads to an international diploma in supply chain management.</p>	Kenya	certification
Country-specific initiatives	Training Needs Assessment Medical Logistics	Bioforce	<p>Human resources capacity is a major problem in Madagascar which faces tremendous difficulties regarding health systems. A 2005 study on needs assessment indicated that to date, there was no reference for logistics. There is no "logistics manager" at any level, therefore no coordination. There was an urgent need to transfer both competence and power to a professionalized trainer group. Partly as a consequence, a large number of physicians were non-functional in their profession.</p>	Madagascar	professionalization
Country-specific initiatives	Achieving better health through enhanced training of pharmacists in Namibia	University of Namibia, Tina Brock, Tana Wuliji, Evans Sagwa, David Mabirizi	<p>Namibia has focused on how to create a career pathway from certificate-level pharmacist assistant to pharmacist. A study detailed the roles and competencies of each cadre that should be clearly defined and linked to job descriptions. It has insisted on the value of a multidisciplinary training with a multidisciplinary health professions training institution. A program to enhance training of pharmacists has been conducted in Namibia as a complementary tool to improve system delivery and reinforce human resources. This program was based on the lack of understanding of pharmacy as a profession or career path. An orientation strategy has been proposed to improve the current system through a University of Namibia pharmacy course to achieve better health through enhanced training of pharmacists.</p>	Namibia	career pathways
Country-specific initiatives	Human resources and logistics hpaul_2000@yahoo.fr www.who.int/immunization	WHO	<p>The report, "Health Logistics in Lome," details sanitary and logistics conditions of Togo's III District. Human resources capacity is sufficient regarding deployment in Lome and no underserved regions have been identified. Numerous recommendations pertain to the large competency framework for logisticians: management tools, working conditions, internet and information systems skills, and improving sanitary conditions of health structures.</p>	Togo	human resource deployment

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Country-specific initiatives	<p>Quantifying health workers numbers, distribution and measuring workload in health facilities</p> <p>Task sharing in Zambia: HIV service scale-up compounds the HR crisis www.biomedcentral.com/1472-6963/10/272</p>	The World Bank	<p>In Zambia, considerable attention has been given by policymakers and researchers to the human resources for health crises. However, little attention has been paid to quantifying health facility-level trends in health worker numbers, distribution, and workload, despite growing demands on health workers due to the availability of new funds for HIV/AIDS control scale-up. A survey was conducted in Zambia: “Task sharing in Zambia: HIV service scale-up compounds the human resource crisis.”</p> <p>The HR crisis has been compounded by the fact that the Ministry of Health (due to budgetary ceilings) has had fixed staff establishments for all districts and health facilities. By 2008, 23% of Global Fund resources had been committed to human resources, but not to hire or to train new health workers. The focus has been on in-service training and workshops to improve the capacity of existing staff.</p>	Zambia	task sharing
Other HR initiatives	<p>Center for Global Development www.cgdev.org</p>	Center for Global Development	HR policies were the focus of the Center for Global Development, which participated in the design of the US Government Global Health Initiative Consultation Draft in March 2010. It was suggested that collaboration between health service personnel could be improved through the systematic rotation of service providers.	Global	policies
Other HR initiatives	<p>Europhia www.scexecutive.com/research/career_motivation.pdf www.europhia.com</p>	Europhia	This consulting company has published the results of a survey on HR in SCM to define how private companies could increase their “employability” by offering tailored packages that focus on career opportunities and their policies on employee career track.	Global	private sector
Other HR initiatives	<p>IntraHealth www.intrahealth.org www.ispi.org/pdf/suggestedReading/vol19_0199.pdf www.jhpiego.org/whatwedo/comps/pqi.htm</p>	IntraHealth	Training and service delivery organizations have tried for decades to improve the quality of and access to health care services in developing countries by training health care providers. The predominant assumption has been that poor performance is attributable to inadequate knowledge and skills—and therefore, that training is the best solution. Realizing that training is often not the solution, organizations such as IntraHealth International have searched for other ways to improve outcomes between the provider and the client. IntraHealth analyzed both domestic research in human performance technology, as well as the current research on the systems influencing family planning provider performance within developing countries themselves.	Global	performance and system
Other HR initiatives	<p>Inter-agency Task Team on HIV and Young People www.unfpa.org/public/iattyp</p>	UNICEF, WHO, UNAIDS	UNICEF and WHO formed the Interagency Task Team HIV and Young People to address the issues of youth in response to HIV/AIDS. The team and other UNAIDS co-sponsors are supporting governments to implement diverse youth programs, build capacity, examine financing and program gaps, as well as exploring synergies, namely capacity-building for government agencies and civil society.	Global	youth programs
Other HR initiatives	<p>International Pharmaceutical Federation www.fip.org www.codegnet.org.uk/gbcf</p>	International Pharmaceutical Federation	<p>At the FIP Educational Taskforce’s 5th Global Pharmacy Education Consultation, the importance of the education of non-pharmacist pharmacy cadres in improving pharmacy services internationally was emphasized. FIP considers the pharmacy profession to be ideally placed to participate in health care worker education in the area of SCM.</p> <p>Following a literature search (2008) and global survey (2009), FIP is establishing a draft global competency framework.</p>	Global	pharmacy services
Other HR initiatives	<p>Nordic+ Procurement Group and the OECD/DAC-World Bank Round Table</p>	OECD, World Bank	The declaration and subsequent policy papers on Joint Procurement by the Nordic+ Procurement Group and the OECD/DAC-World Bank Round Table on Procurement covers all areas associated with procurement supply management. This is one of several international efforts to standardize donor support to public health sectors and promote country ownership of implemented policies and activities.	Global	policy
Other HR initiatives	<p>Participatory Action Research</p>	University of Canberra	Participatory Action Research aims to improve health and reduce health inequities through involving the people who, in turn, take actions to improve their own circumstances. The University of Canberra is providing a framework that involves the health workers in improving training methods that will lead to the improved development of the competencies they require for medicines supply management at their level of practice. By the end of 2011, validated pedagogical approaches for the development of medicines supply competencies in the three levels of health care workers in PICs will be completed. In 2012 these pedagogical approaches will be made available to the broader range of academic institutions in the region including universities, tertiary colleges, and ministries of health.	Global	training methods

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Other HR initiatives	Impact of culture and local needs in developing teaching methods	WHO, UNESCO, FIP	A new approach and innovative education has been undertaken to support MDGs development through culturally based teaching methods specific to various cadres. The project is informed by the broader framework of the Pharmacy Education Action Plan of WHO, UNESCO, and FIP. This action plan aims to identify locally determined needs and pharmaceutical services to facilitate comprehensive education development and achievement of competencies. The approach considers the impact of culture and local needs in creating novel approaches to competency development using a participation action framework.	Global	culturally based teaching methods
Other HR initiatives	Logistics modeling	WHO headquarters	Logistics models adapted from the model developed by AFRO Logistics Team have been used extensively throughout procurement and supply management workshops, seminars, and trainings in the WHO African Region. Recommendations acknowledge that effective supplies and logistics systems require sufficient management capacity, personnel, materials, and money.	Global	management capacity

Abbreviations used: AFRO, WHO Regional Office for Africa; AMP, Agence de Médecine Préventive; CDP, Capacity Development Plan; EMP, WHO Department of Essential Medicines and Pharmaceutical Policies; ESAMI, Eastern and Southern African Management Institute; EVM, Effective Vaccine Management Initiative; FIP, International Pharmaceutical Federation; HR, human resource; HRH, WHO Department of Human Resources for Health; KISM, Kenya Institute of Supplies and Management; MDG, Millenium Development Goals; MSF, Médecins Sans Frontières; MSH, Management Sciences for Health; NGO, nongovernmental organization; PSM, Procurement and Supply Management; REACH, Rural Expansion of Afghanistan's Community-based Healthcare; SCM, supply chain management; UNAIDS, the Joint United Nations Programme on HIV/AIDS; UNDP, United Nations Development Programme; UNESCO, United Nations Educational, Scientific and Cultural Organization; UNICEF, United Nations Children's Fund; USAID, US Agency for International Development; WHO, World Health Organization.