Strengthening School Management:

A Guide for Optimizing the Use of Health Workforce Education Resources

Rebecca Bailey, **Richard Seifman**, **Heather Ross**, and **Kate Tulenko**,
IntraHealth International

USAID FROM THE AMERICAN PEOPLE
CapacityPlus Serving health workers, saving lives.
PEPFAR U.S. President's Emergency Plan for AIDS Relief

ACKNOWLEDGEMENTS

The authors are grateful to the following individuals who made important contributions to the development and testing of the school management improvement framework, implementation steps, and supporting tools:

- Albert Acquah, CEO, Garden City University College School of Nursing, Ghana
- Claudia Adkinson, Executive Associate Dean Emeritus, Emory University, School of Medicine, USA
- Ian Couper, Director, University of the Witwatersrand Centre for Rural Health, South Africa
- Peter Ewell, Vice President, National Center for Higher Education Management Systems, USA
- Jehu Iputo, Former Director, Walter Sisulu University, School of Medicine, South Africa
- Kenneth Iserson, Professor Emeritus, Department of Emergency Medicine, University of Arizona, USA
- Carl Leitner, Associate Director, Health Workforce Informatics, Capacity*Plus*/IntraHealth International, USA
- Ok Pannenborg, Co-Chair, Capacity*Plus* Global Advisory Board on Strengthening Medical, Nursing, and Public Health Schools in Developing Countries, USA
- Jay Scott, Managing Director, CBO Partners, Virginia, USA
- Stacey Zis, Senior Research Associate, National Center for Higher Education Management Systems, USA

TABLE OF CONTENTS

DEFINITIONS

Academic program	A course of study that results in a certificate, diploma, degree, or other qualification. Includes an architectural design of learning content, which is multidimensional and incorporates intentions, structure of content, delivery modes, academic resources, and assessment modes
Administrative unit	A unit within an institution that spans one or more curricular units. Common names include school, college, or division. An individual such as a dean, director, or assistant provost is charged with administrative and budgetary oversight.
Clinical preceptor	A practicing clinician, such as a physician or nurse, who gives practical instruction, training, and/or supervision to a student or young clinician, especially of medicine or nursing
Curriculum (plural curricula)	The planned experiences and interactions of students with instructional content, materials, resources, and people—including the assessment of student learning—for the purpose of achieving identified educational outcomes
Educator	Any person responsible for student learning, including clinical supervisors and preceptors working at clinical facilities
Health worker	Any person engaged in actions whose primary intent is to enhance health
Health workforce educational institutions	Public or private medical, dental, pharmacy, nursing, midwifery, and other health sciences faculties and schools, as well as vocational training institutes for allied health professions
Knowledge management	The process of capturing, developing, sharing, and effectively using organizational knowledge
Production capacity	The maximum volume of high-quality products or outputs that can be generated by an enterprise in a given period using currently available resources
School leaders	The senior management group or team. In many schools, this consists of the head of the organization and his or her direct reports. Senior leaders can include, for example, a school's president, chancellor, provost, vice presidents, directors, deans, associate deans, department heads, and chief officers for finance, communications, and external affairs.

Social orientation	Business philosophy that takes the well-being of society into account in addition to satisfying the desires of customers
Stakeholders	Persons, groups, or institutions that have an interest in the institution or its graduates
Stakeholders (key)	Those stakeholders, both internal and external to the institution, who can significantly influence the school management improvement process, or are important to its success, or both
Stakeholders (primary, internal)	Those directly affected, such as administrators, teachers, students, and staff at clinical practice sites
Stakeholders (secondary, external)	Those affected in an indirect or limited way, such as health care facilities, community organizations, professional associations, regulatory bodies, and ministries of health and education

Executive Summary

Education and training institutions around the globe are struggling to meet the increasing demand for more health workers who are capable of providing high-quality HIV/AIDS, family planning, and maternal and child health services to expanding populations. A more business-like approach to operating and managing these institutions would allow them to produce greater numbers of competent and qualified graduates within current, marginally expanding, or even decreasing budgets. However, senior school leaders—such as presidents, principals, deans, directors, and department heads—frequently rise to their positions through academic and clinical promotions, acquiring little formal management, administrative, or business training along the way. Many have only limited exposure to best practices in operations and management and may be unaware of, or overwhelmed by, the inefficiencies within their schools.

This guide describes a framework, implementation steps, and tools to help school leaders improve their management practices. The specific objectives are to:

- Raise awareness of the important role that school management plays in achieving educational goals
- Help school leaders manage their schools more efficiently and effectively—with the overarching aim of scaling up the production of relevant, competent, and qualified graduates.

Based on consultations with experts in the field of higher education management, and in-depth experience with two pilot schools, we developed a cyclical, participatory approach of self-assessment against predefined management standards or good practices, followed by prioritization, goal-setting, planning, implementation, and monitoring of progress. The process involves critically examining and improving practices in nine management dimensions: leadership and governance; strategic planning; external relations; financial resources; personnel; students; equipment and materials; facilities and infrastructure; and evaluation and knowledge management. This guide outlines the framework and steps of the approach, and provides useful tools to support each step.

School leaders in both public and private educational institutions can use the approach to better align management practices with a school's educational goals. The approach can be applied by school leaders with formal management training as well as those with little to no training. In addition, external stakeholders can use the guidance in this document to support schools in initiating or sustaining efforts to improve their management practices. External stakeholders include representatives of both national and international governmental organizations, technical agencies, regulatory bodies, or nongovernmental associations focused on education or health, as well as donors and financing agencies interested in investing in health workforce education.

INTRODUCTION

Progress toward achieving global and national goals for universal health coverage and increased access to high-quality HIV/AIDS, family planning, and maternal and child health services is directly linked to the size, distribution, and quality of the health workforce, which is an essential building block of any health system. Health workers are not only needed to identify new individuals in need of treatment, contraception, or other services, but also to support those people in adhering to their agreed plan of treatment and care. Nearly every country, regardless of income level, is struggling with persistent challenges in the health workforce, including health worker shortages, imbalanced geographical distribution, poor skills mix, and uneven performance, which greatly hinder the provision of essential health services (World Health Organization [WHO] 2006). In 2013, the Global Health Workforce Alliance and the WHO estimated a global deficit of 7.2 million doctors, nurses, and midwives, with the greatest shortfalls in low-income countries with the highest burden of disease (Campbell et al. 2013). Sub-Saharan Africa, for example, has the highest burden of disease of any region and about 16% of the world's population, but only 3% of the health workforce is located in Africa, leaving it with a density of about one health worker per 1,000 people—the lowest of any region (Crisp and Chen 2014).

Clearly, more health workers must be educated and trained—especially in Africa where the health needs are greatest. In addition, education and training institutions must ensure that graduates develop the core competencies needed to address local health needs; represent the people they serve in terms of language, gender, and other socioeconomic characteristics; and practice where needed at all levels of the health system, particularly in underserved areas. Unfortunately, the capacity to increase and transform the supply of health workers is constrained by the limited number of educational institutions and the scarcity of resources available to them (Frenk et al. 2010; Mullan and Frehywot 2010).

Strengthening Institutional Capacity

Health workforce educational institutions include medical, dental, pharmacy, nursing, midwifery, and other health sciences faculties and schools, as well as vocational training institutes for allied health professionals such as laboratory technicians, nutritionists, and physical therapists. They range from small, stand-alone colleges to faculties, schools, and departments embedded within larger institutions, such as universities. Whether public or private, the majority of these institutions struggle to attract, retain, and graduate a sufficient number of qualified health workers who remain in their countries and work where needed, especially with rural and underserved populations.

Traditional approaches to building health workforce education and training capacity have concentrated on the *instructional* components of schools, such as revising or updating curricula, introducing more effective learning approaches, and training academic staff. While these activities are important to improve the quality of graduates, they rarely result in an increased number of health workers produced. *Institutional* components of education and training

encompass the material, financial, human, and knowledge resources needed to deliver relevant and effective educational programs. They also include leadership, governance, and mechanisms to ensure continuous improvement and updating of curricula in response to changes in knowledge, technology, and health service delivery needs. Efforts to strengthen both the instructional and the institutional components of educational programs are needed to achieve educational goals in terms of quality of learning and sustainably bring about a needed increase in the production of graduates (see Table 1).

Table 1: Institutional and Instructional Components of Educational Institutions

Educational Institutions	
Institutional	**Instructional**
Educators Students Infrastructure Materials and equipment Management and financing Quality assurance Partnerships	Curricula Learning approaches

Source: Adapted from Frenk et. al 2010

As the twenty-first century progresses, a transformative vision for health professional education is gaining ground. This vision emphasizes universal coverage by a health workforce that adapts core, globally significant professional competencies to local needs and is competent to participate in patient-centered teams (Frenk et al. 2010). The gradual shift toward more team- and competency-based educational approaches has created greater strains and demands for resources. For example, experiential, community-based learning programs have been shown to increase student exposure to rural practice and build competencies in primary care (WHO 2010). However, these programs pose institutional challenges in terms of infrastructure, staffing, and quality assurance necessary to provide oversight.

Institutional capacity can often be developed through new investments in schools. To help generate new investments, Capacity*Plus* produced the Bottlenecks and Best Buys Approach that aims to identify bottlenecks to increasing the production of competent and qualified graduates that can be overcome through limited yet strategic investments. The approach is described in a separate document (Bailey and Tulenko 2015). However, while investments are likely to help schools increase their capacity, some bottlenecks, such as a high turnover of teaching staff, will likely require changes in management practices. This school management improvement framework can be used to further examine underlying causes and potential solutions to selected challenges that are identified through the Bottlenecks and Best Buys Approach. The relationship between the Bottlenecks and Best Buys Approach and this framework is illustrated and detailed later in this document.

This document provides guidance to help school leaders strengthen their management practices in order to optimize the human, material, financial, and knowledge resources needed to deliver high-quality educational programs.

The Role of School Management

Viewed through a business or economics lens, educational institutions can be described as factories that have a range of resource inputs, and with them produce a supply of health workers who are absorbed into the labor market to respond to demand. Unfortunately, most schools are highly inefficient factories. Through no fault of their own, school leaders and administrators—such as presidents, chancellors, provosts, vice presidents, principals, directors, deans, associate deans, and department heads—frequently lack the management training and tools needed to more effectively and efficiently manage critical educational resources such as infrastructure, teaching staff, finances, materials, and equipment. These leaders typically rise to their positions through academic and clinical promotions, acquiring little formal management, administrative, operational, finance, or business training along the way. They may have little exposure to advanced operations and management best practices and, therefore, limited capacity to implement the transformations needed to produce greater numbers of competent graduates who are relevant to the local health system and labor market.

Management consists of the interlocking functions of creating institutional goals and then setting policies, organizing, planning, controlling, and directing an organization's resources to achieve those goals. In the case of education, broad institutional goals are defined through a school's educational vision, mission, and objectives. In most institutions, the board of directors defines these goals, which are then carried out by a chief executive officer, such as the president or chancellor of a university, or the principal or president of a college. In working toward the agreed objectives, school leaders—such as deans, directors, and department heads—serve as managers who are charged with making decisions that affect the organization on every level. The size of the management team can range from one person to hundreds (see Figures 1 and 2).

Figure 1: Example of an Organizational Chart (Simple)

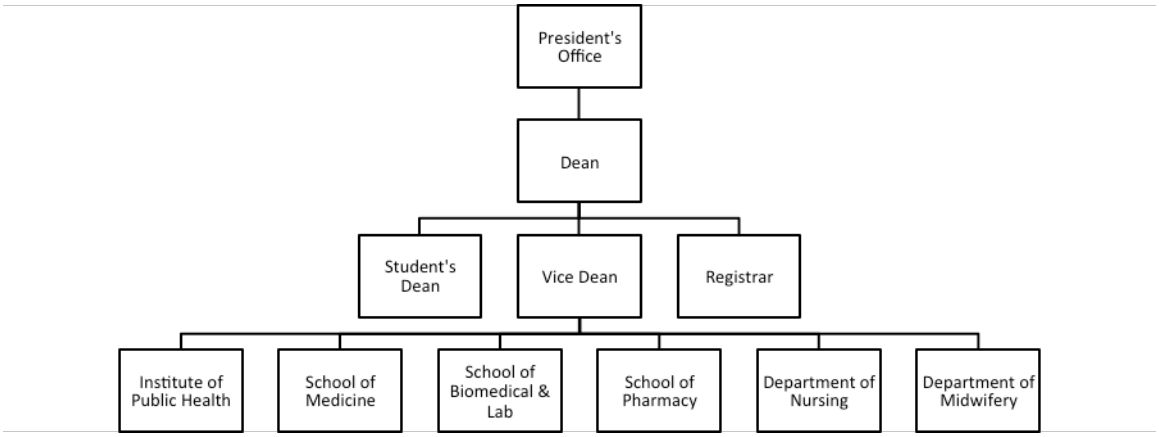
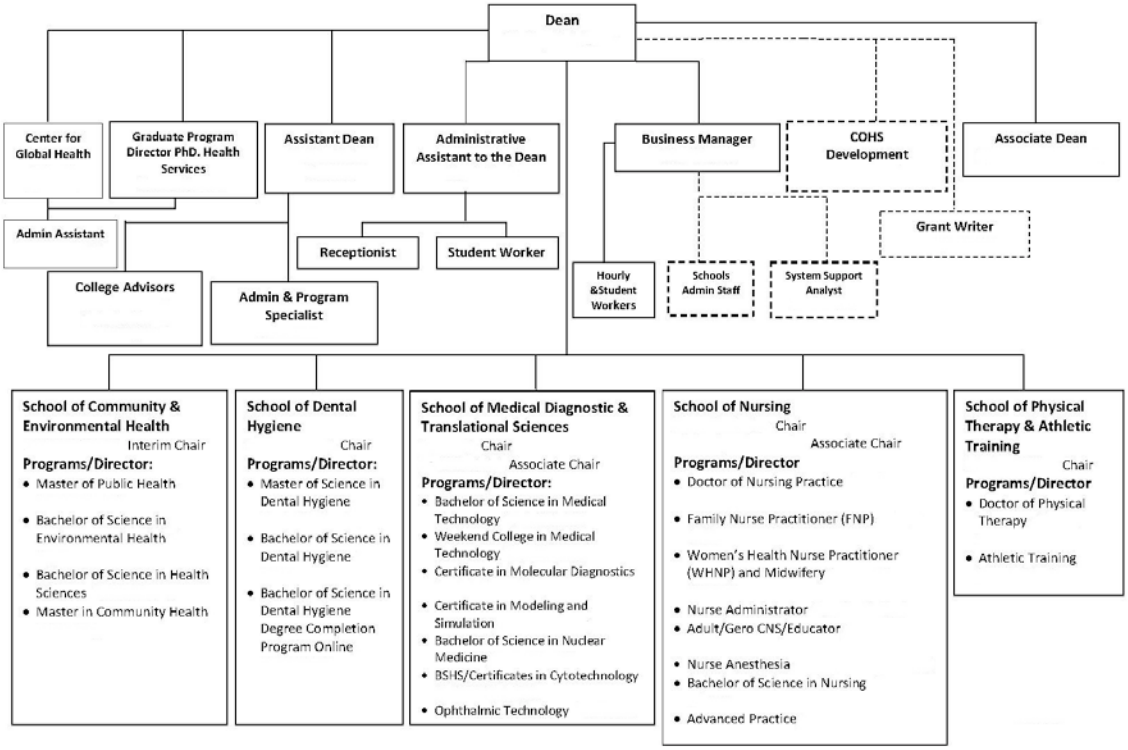


Figure 2: Example of an Organizational Chart (Complex)



The practices and decisions made by an institution's management team may include hiring new teaching faculty, developing a new academic program, and deciding how many new students to enroll. These decisions should align with the goals set out in a school's strategic plan and be supported by other key management activities such as operational planning, marketing, income generation, procurement of materials and equipment, recruitment of personnel, infrastructure planning, and monitoring and evaluation (Schloss and Cragg 2013). This document presents a framework, implementation steps, and tools for assessing a school's current operational and management practices, identifying priority areas for action, and driving forward changes.

TARGET AUDIENCES

The management functions addressed in this document are relevant to all types of institutions that produce health workers, ranging from secondary-level vocational training institutes to tertiary medical schools. Therefore, the intended audiences for this guide are:

- School leaders in public and private educational institutions, such as the dean of a faculty of health sciences, the director of a medical or nursing school, or the principal of a health assistant training school
- Representatives of national governmental organizations such as the Ministry of Health, Ministry of Education, and research institutes

- National technical agencies, regulatory bodies, or associations such as national nongovernmental organizations (NGOs) focused on education or health, national health professional councils or associations, or national associations of nursing or medical schools
- International technical agencies or associations such as United Nations specialized agencies, international NGOs, international professional councils or associations, or international associations of nursing or medical education
- Donors and financing agencies interested in investing in health workforce education, such as USAID, the African Development Bank, national development banks, ministries of finance, and other bilateral or multilateral donors.

THE SCHOOL MANAGEMENT IMPROVEMENT FRAMEWORK

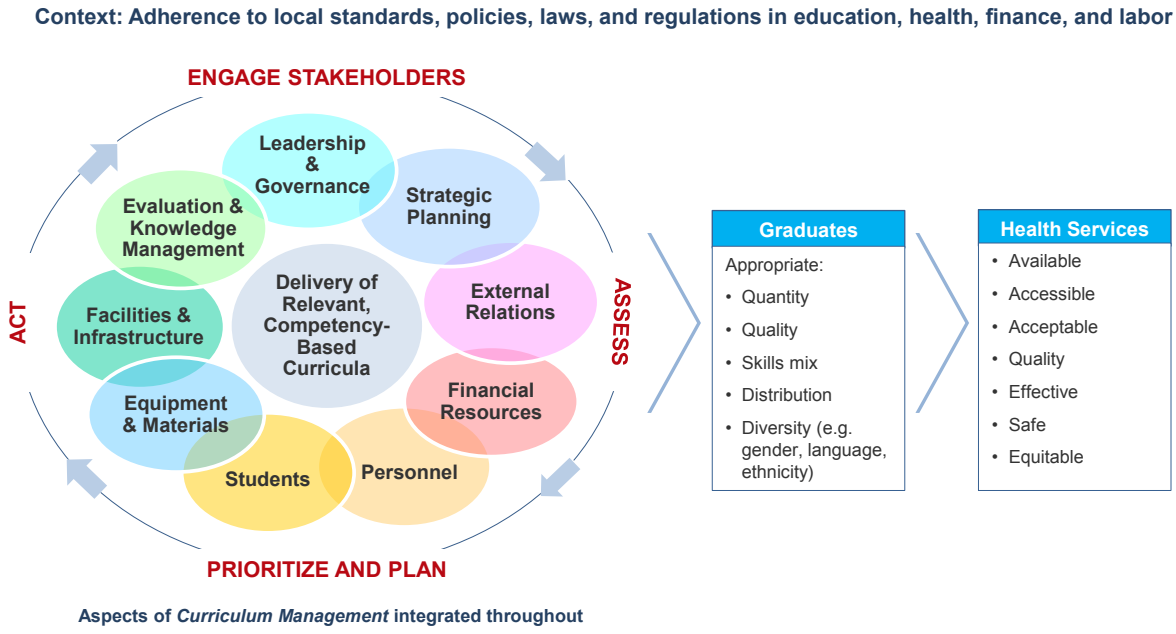
Capacity*Plus* collaborated with experts in higher education operations and management to assemble a framework that guides school leaders in critically assessing and improving their management practices in order to produce greater numbers of high-quality graduates. We presented the draft framework and collected feedback from leaders in health workforce education during a side meeting at the 2014 Prince Mahidol Award Conference in Thailand, whose theme was transformative learning for health equity. We also worked with the National Center for Higher Education Management Systems and two educational institutions in Africa to pilot-test and refine the framework and supporting tools. The pilot schools included a small, privately owned, not-for-profit college in Ghana (Garden City University College School of Nursing [GCUC]) and a medical school within a large publicly owned university in South Africa (Walter Sisulu University [WSU], School of Medicine). Because the framework is intended to be flexible, adaptable, and applicable to a wide variety of health professional schools, we chose these two very differently structured pilot schools to verify this flexibility and reflect the range of contexts in which the health workforce is educated. GCUC is growing rapidly and has the ability to make rapid changes to its management practices. The School of Medicine at WSU is well established and embedded within a large and complex public institution that has been educating medical students for 30 years; it has little control over management practices in areas such as finances and personnel but considerably greater resources and experience than GCUC.

Most schools that produce health workers undertake three simultaneous and distinct types of activities: 1) education; 2) research; and 3) service delivery. This school management improvement framework focuses on strengthening the education function of a school, while recognizing that there are overlaps among the three types of activities that are typically implemented by a school and its faculty members. For example, students are exposed to research concepts and service delivery through their studies. Both students and their educators provide some level of services when completing practical rotations. Many faculty members also provide clinical services. Although efforts to strengthen the management of educational programs may have an indirect effect on research and service delivery, the overarching aim of the school management framework and tools is to achieve a school's vision, mission, and

objectives relative to its educational function, thereby increasing graduates' competence to deliver high-quality services in their professional lives.

The school management improvement framework comprises four strategic principles: 1) recognition that each school is situated within a unique regulatory and practice environment; 2) a focus on nine management dimensions that contribute to the delivery of relevant, competency-based educational programs; 3) an improvement cycle that involves engaging stakeholders, assessing management practices, planning, acting, and monitoring actions; and 4) an overarching goal of producing appropriate graduates who are able to deliver high-quality health services (see Figure 3).

Figure 3: School Management Improvement Framework



Regulatory and Practice Context

In managing their institutions, school leaders must focus internally on the resources and processes needed to produce graduates, but also externally on what is needed to ensure compliance with standards, policies, laws, and regulations that have a bearing on education and health care. The framework, therefore, highlights the importance of reviewing and adhering to regulatory frameworks not only in the education sector, but also in the health, finance, and labor sectors as schools move forward with changes to management practices, such as raising funds, recruiting new students and employees, renewing infrastructure, and procuring equipment and materials.

Management Dimensions

The framework concentrates on nine interrelated key management dimensions: leadership and governance; strategic planning; external relations; financial resources; personnel; students;

equipment and materials; facilities and infrastructure; and evaluation and knowledge management. Management practices within these nine dimensions can either facilitate or hinder the delivery of relevant, competency-based academic programs, and have a direct impact on a school's ability to produce appropriate numbers of competent and qualified graduates.

Curriculum management—which entails designing, implementing, monitoring, and evaluating curricula—is the core business of education. For this reason, elements of curriculum management are embedded within each of the nine management dimensions. Each dimension is, therefore, assessed in relation to how well it supports the central educational function of the institution. In this way, the framework concentrates on supporting the delivery of curricula through better alignment of the school's human, financial, material, and informational resources with its educational goals. Alignment of resources with educational goals is best achieved through the application of good operations and management practices across the nine dimensions. Each management dimension is described in more detail below.

1. Leadership and governance

Leadership involves scanning challenges and opportunities in the environment, focusing attention on critical challenges, and inspiring others to learn, act, commit, and create effective solutions. An essential leadership skill in educational institutions is the ability to manage power dynamics that can frequently arise when new resources or innovations are perceived as a threat to those in power. Effective leadership is a prerequisite for effective governance and management. Governance involves setting a strategic direction and objectives; making policies, laws, rules, and regulations; raising and deploying resources to accomplish strategic goals; and ensuring that strategic goals and objectives are accomplished. Key management practices in the leadership and governance domain entail identifying and engaging with internal and external stakeholders; using information to inform decisions; conforming to ethical standards and promoting ethical behavior; communicating the school's vision, mission, goals, and values; clearly defining lines of responsibility and authority (e.g., organizational charts); complying with standards, laws, policies, and regulations of oversight bodies, such as the national quality commission for higher education and national professional councils; tracking adherence to educational standards in areas such as teacher-student ratios, space, materials, and equipment; and collecting feedback from internal stakeholders and governing bodies such as student and faculty councils.

2. Strategic planning

Strategic planning is concerned with identifying a school's long-term direction, defining a strategy or plan for achieving it, and making decisions on the allocation of resources to implement the plan. It is a cyclical activity with three main phases: 1) assessment and analysis; 2) writing or updating a plan; and 3) taking action to achieve the agreed goals while monitoring progress. To determine the future direction of a school, school leaders must develop a clear understanding of the labor market for its graduates through engagement with local institutions and communities, the current position of the school within the local context, and the possible avenues through which the school can pursue particular courses of action. Annual operational plans and budgets should be developed to support the implementation of long-term strategic

plans. Key management practices in this dimension include creating and maintaining high-level plans; disseminating, using, and monitoring the implementation of these plans both internally and externally; and developing annual operational plans and budgets.

3. External relations

Management of external relations refers to a school's interactions and relationships with its environment and community. Given the complex relationships among clinical teaching sites, communities, governments, and other partners, school leaders should seek partnerships both within the educational institution and externally with leaders, institutions, and communities outside of the school. Primary management activities in this dimension include marketing and fundraising (including outreach to rural areas and engagement with secondary schools for the recruitment of new students); tracking, interfacing, and networking with alumni; responding to needs in the health worker marketplace; and creating concrete links between the institution and others—such as all levels of health facilities, leaders in academia, industry, finance, politics, and the media—through various mechanisms, including formal memoranda of understanding.

4. Financial resources

Financial resources management involves overseeing and administering the school's finances with particular attention to how such resources support the institution's academic programs, mission, values, and goals. It involves efforts to expand and diversify income sources, such as through public-private partnerships and various contracting and investment options. Key management practices in this dimension include financial forecasting and planning; budgeting, accounting, and reporting; measuring cash flow; managing debt; contracting and procurement; and preparing external reports in compliance with relevant regulations and standards.

5. Personnel

Personnel management is concerned with the recruitment, productivity, retention, and job satisfaction of all people employed by the school, both full- and part-time. It involves a set of practices to ensure that the school has an effective workforce in place to meet operational needs. Successful organizations are those that develop and nurture their human capital to achieve their organizational goals and objectives. Essential management activities in this dimension include forecasting personnel needs; developing and applying standard procedures for recruitment, hiring, and firing; writing job descriptions; managing performance; developing and implementing retention plans; training and professional development, including management training for school leaders; implementing systems of employee recognition and support; and succession planning. It is the responsibility of managers to conduct these activities in an effective, legal, fair, and consistent way.

6. Students

Student services, admissions, and enrollment management have a number of aspects in common with the personnel management dimension for school employees. Student-related functions aim to provide seamless support to students from matriculation to graduation and beyond. Recognizing the range of components that affect academic success, management practices in this dimension focus on recruiting and retaining students and supporting their

academic progress, psychological development, and personal well-being. They include processes for attracting, recruiting, and admitting students; delivering orientation, health, and housing services; offering sports and recreation opportunities; providing support to retain students such as financial aid, scholarships, tutoring, counseling, and employment and career planning; and assessing performance and tracking of applicants, admissions, dropouts, and graduates. This dimension involves the most diverse and important set of management practices for ensuring the success of a school.

7. Equipment and materials

Health workforce education requires a wide range of equipment and materials to support students in developing the competencies needed to deliver relevant, safe, and technically sound health services. They include textbooks, journals, computers, software, anatomical models, and medical supplies and equipment. Commodities and purchasable items can account for a high proportion of training costs. School leaders, therefore, need to make informed choices about what to buy in order to meet educational goals and avoid wasting limited resources. Procurement is only one part of managing educational equipment and materials. In addition, effective storage, stock control, and maintenance are needed to get the most out of what is purchased. Management of life-cycle contracts for equipment and supplies is paramount. Key management practices in this dimension include needs forecasting; procurement management; inventory control, including mechanisms to prevent corruption and theft; maintenance of items; and obsolescence planning.

8. Facilities and infrastructure

Facilities include the buildings, fixtures, and equipment necessary for the effective and efficient operation of the educational program. They include both the educational facilities and the associated facilities within the health system where students undertake professional practice. Infrastructure refers to the basic physical and organizational structures needed for the operation of an enterprise, including water, electricity, telecommunications, Internet connectivity, and transportation. Facilities and infrastructure have been shown to influence student learning. This dimension is concerned with the physical spaces of the institution, which includes safety, security, cleaning, and maintenance and repairs, as well as durable goods, utilities, transportation, and communications infrastructure. All need to be in compliance with local standards, laws, and regulations. Management activities in this dimension comprise needs forecasting, procurement, inventory control, maintenance, planning for the optimal use and occupancy of classrooms and other infrastructure, facility audits, security and evacuation, asset management, and planned obsolescence of facilities.

9. Evaluation and knowledge management

Evaluation and knowledge management refers to the collection of information, data, and knowledge necessary for sustaining the educational mission and goals of a school, as well as the dissemination of information to key stakeholders who rely on it for planning and decision-making. Management activities in this dimension include complying with accreditation requirements; establishing partnerships for knowledge management and sharing; and evaluating

and updating curricula in response to changes in knowledge, technology, and local health service delivery needs.

Improvement Cycle

In developing, testing, and refining the framework, a sequence of steps emerged for critically analyzing management practices in the nine dimensions, and for planning and implementing changes. The cycle involves engaging key stakeholders in defining medium-term educational goals, assessing current management practices against agreed standards, prioritizing and planning a feasible set of improvement actions, implementing the plan, and monitoring progress, followed by the next round of assessment. A participatory and cyclical process of improvement has been shown effective for meeting management goals in complex institutions (Goldfarb and Morrison 2014; Lande 2002). Professionals are more receptive to changing their practices when they are involved in setting goals and identifying strategies to achieve them. Comparisons between agreed performance standards and self-observed behavior allow stakeholders to define needs and identify actions that can be taken to fill them. Inclusive and needs-based discussions discourage planning on the basis of guesses and limited information, and encourage stakeholders to look at manageable components of a challenge, rather than attempt to solve a seemingly intractable whole. Such solutions, when locally led, are more sustainable than are externally-funded and -managed interventions (Vachon et al. 2013).

Expected Outputs and Outcomes

Application of the school management framework—through an improvement cycle with a focus on one or more of the nine management dimensions—should lead to specific, predefined outputs in terms of graduates and outcomes in terms of the health services they can provide after graduation. When embarking on a process to improve school management, school leaders must clearly define what they expect to achieve relative to the number, types, quality, and relevance of graduates they will produce. Defining expected results is best done in consultation with key stakeholders, including practicing health professionals, local health authorities, and service users, to develop a realistic understanding of the quantities and types of health workers needed to meet local health service needs and perform well in local health services. These expectations should be frequently referred to as the school moves forward in analyzing its management practices, implementing changes, and evaluating the effectiveness of those changes.

The following are general descriptions of the outputs and outcomes that educational institutions should aim to achieve in terms of their graduates and the health services that they will eventually deliver.

Graduate outputs

Health workforce educational institutions should produce enough of the right types of health workers who stay in their country and work where needed in both rural and urban areas and at all levels of health services—primary, secondary, and tertiary. Graduates should not only demonstrate technical competencies, as required by national certifying and licensure exams, but

also service delivery competencies such as the ability to work in teams, adapt to changing practice environments, respond to evolving population health needs, initiate change, comply with professional codes of ethics, and educate and train others. Although achieving these outputs would seem to rely fully on curricular quality, the outputs are in fact a function both of the instructional (quality of curriculum) and institutional facets of a school's responsibilities. For example, in developing academic programs and selecting students for them, schools should target applicants who are most likely to work in underserved areas, interested in pursuing studies in needed fields (e.g., general practice, primary care, teaching), and representative of society in terms of gender, language, ethnicity, and other socioeconomic factors. In many cases, this will require concerted efforts to recruit students with these characteristics and to support them both academically and psychosocially so that they successfully complete their studies and graduate on time (WHO 2013; WHO 2010; PMAC 2014).

Health service outcomes

All too often, well-educated graduates find themselves ill-prepared to meet the challenges they face when they take up posts in health services. The mix of skills they have acquired during their education might not be oriented to their eventual workplace. The scientific content of their education may be poorly matched to the epidemiology of the communities in which they work. Insufficient collaboration between the health and education sectors, as well as weak links between educational institutions and the health services that employ graduates, often result in a mismatch between education and the realities of health service delivery. Graduates who are not representative of the people they serve in terms of language, ethnicity, or other social and demographic factors may find it more difficult to understand and respond to the particular health needs. These factors limit the capacity of even highly qualified personnel to improve health outcomes. Educational institutions must seek to produce graduates who are capable of providing good health services (WHO 2011). Good health services are those delivered to people who need them, when and where needed, with minimum waste of resources. Services—be they prevention, treatment, or rehabilitation—may be provided in homes, communities, workplaces, schools, or health facilities. Wherever they are provided, health services should be organized, managed, and delivered to ensure that they are available, accessible, acceptable, effective, safe, equitable, and provide continuity of care across health conditions, across different locations, and over time (WHO 2007; WHO and OHCHR 2007).

Steps and Tools for Applying the Framework

The process of applying the school management improvement framework involves five primary steps:

1. Designate a coordinator
2. Identify and engage stakeholders
3. Conduct a self-assessment
4. Prioritize and plan for improvements

5. Implement and monitor progress.

A variety of analytical, planning, and management tools are needed to support school leaders in applying these steps. They include a school management self-assessment instrument, a planning matrix, and tools for monitoring and evaluating progress. These tools and related steps are described below.

Step 1: Designate a Coordinator

One of the school's leaders should take responsibility for coordinating the school management improvement process. For example, the director of a faculty of health sciences or medical school could take responsibility for moving the process forward, or s/he could appoint another member of the management team to take the lead as coordinator. If needed, the coordinator can form a team or committee representing different departments or aspects of the school or academic program that need strengthening. The coordinator should oversee all steps in the improvement process, starting with identifying important leaders, managers, and administrators within the school and bringing them together for an orientation meeting to introduce and discuss the school management framework and improvement cycle.

Step 2: Identify and Engage Stakeholders

The school management improvement cycle begins with the identification and engagement of key stakeholders (see Appendix A). Key stakeholders are persons or groups, internal and external to the school, who have an interest in the institution or its graduates and can significantly influence management practices, or are important to their success, or both. They typically include, but are not limited to: the dean or director of the faculty, college, or school; the directors or heads of relevant departments; the school registrar; the head of academic affairs; the senior administrator or finance officer; representatives of students, teachers, and clinical tutors/supervisors; managers or supervisors at associated clinical practice

Example: Walter Sisulu University Stakeholders Involved in Management Improvement

- Deputy Dean, Faculty of Health Sciences
- Director, School of Medicine
- Immediate Past Director, School of Medicine
- Director, School of Nursing
- Immediate Past Director, School of Nursing
- Faculty Administrator, Faculty of Health Sciences
- Chair of the Quality Assurance Committee, Faculty of Health Sciences
- Quality Assurance Officer, Faculty of Health Sciences
- Chair of the Undergraduate Education Committee, Faculty of Health Sciences
- Chair of the Higher Degrees Committee, Faculty of Health Sciences
- Chair of the Mentoring Committee, Faculty of Health Sciences
- Professor and Chair, Internal Medicine
- Professor and Chair, Pediatrics
- Professor and Chair, Chemical Pathology
- Professor of Pathology and Chair of the Abnormal Function Phase of the Integrated MBChB Program
- Head, Clinical Associate (Physician Assistant) Training Program
- Finance Officer (accountant) in charge of the Faculty of Health Sciences accounts
- Director of Talent Sourcing (Human Resources)
- Human Resources Officer
- A senior medical student

facilities; representatives of national and local health and/or education authorities (e.g., municipal department of health or education); representatives of local regulatory bodies for education and health; and potential local and/or national donor agencies or investors. Engaging with stakeholders from the start of the process enables a proactive cultivation of relationships that can serve as capital during challenging times. Based on the experience at Walter Sisulu University, a complex institution, the stakeholder group can be large and extensive (see box). Advice regarding managing large stakeholder groups so that they function well, have a positive impact, and avoid typical difficulties can be found in Capacity*Plus*'s *Guidelines for Forming and Sustaining Human Resources for Health Stakeholder Leadership Groups* (Gormley and McCaffery 2011).

Stakeholders, particularly those within the institution, should agree on which administrative unit will be the focus of the management improvement process (e.g., school, faculty, or college). In selecting the administrative unit, they should decide if improvements are needed at the level of a department, school, faculty, or higher level, such as the entire university or college. It is important to note that as administrative units become smaller and more specialized, such as the academic department level, the number and types of management practices within a unit's control decreases. For example, very few academic departments have full control over human resources, financing, and income generation for their academic programs. These aspects are normally managed at the faculty level or higher.

Stakeholders should agree on expected results. Results should be defined in terms of the numbers and types of graduates the selected administrative unit must produce for the next one to three years. In defining expected results, school leaders should consider not only the quantity of graduates needed, but also the quality and relevance of graduates. To do this, they should consult a range of sources and stakeholders, including practicing health care providers, to obtain a clear understanding of the workforce needed to meet current and future health care needs. Defining expected results involves asking questions such as: Is there a need to accelerate the production of graduates from a specific academic program? Are there too few qualified applicants for priority programs, such as midwifery? Is there a need to create new academic programs? Is there a need to incorporate more effective educational approaches into existing programs?

Stakeholder identification and engagement tool

Appendix A provides guidance and tools to help school leaders identify key stakeholders and plan for their engagement throughout the school management improvement process.

Step 3: Conduct a Self-Assessment

Once there is agreement on the administrative unit of focus and the expected outputs in terms of graduates, school leaders can conduct a self-assessment to analyze their management practices against agreed standards. Standards are statements, developed through a process of consensus-building with stakeholders, on the preferred or ideal practices in an area. Self-assessment is a repeated process, not a one-time occurrence, which offers an opportunity to observe progress over time. Professionals are more receptive to changing their practices when

they are involved in assessing their own performance and identifying strategies to achieve shared goals. For this reason, cyclical self-assessment can be a powerful and cost-effective approach to stimulate action toward change.

Self-assessment provides an opportunity for a school's leadership team to:

- Confirm areas where management practices are meeting standards
- Identify gaps in current systems and processes that do not meet standards
- Plan actions to address identified gaps in systems and processes.

The process allows a school to identify and acknowledge strengths, which in many instances may be overlooked, as well as areas of needed growth. Self-assessment should lead to the development of an improvement plan with clearly defined goals, measurable objectives, a timeline, and identified fiscal and personnel resources.

The self-assessment tool provides a list of questions related to each management dimension. When all dimensions are combined, the questionnaire can seem very long and unmanageable. For this reason, it is recommended to: (1) either separate the tool into modules by dimension and administer one or two modules at a time, with the assessment of different modules spaced over an extended period of time; or (2) distribute modules for some dimensions, such as financing, to a smaller group that has expertise in that area. The goal is to limit each round of assessment to a manageable size to allow for a thorough analysis and response to the findings. ***The Self-Assessment Tool is available as a separate document and contains an administrator's guide, an introduction for respondents, and the self-assessment questionnaire.***

School Management Self-Assessment Questionnaire

In developing the School Management Self-Assessment Questionnaire, we reviewed key resources on higher education standards and school-based management practices produced by the Council for the Advancement of Standards in Higher Education (2012) and the National Institute of Standards and Technology (Baldrige Performance Excellence Program 2013). We also engaged with experts in the field of higher education operations and management, including the National Center for Higher Education Management Systems, in developing and pilot-testing the tool.

A core group of stakeholders should review the questionnaire and agree on the management dimensions and standards to be included in the assessment, as well as the time frame and method for its administration. The group should keep in mind that there will likely be several rounds of assessment and, therefore, the full assessment tool does not need to be completed in the first round. With this in mind, the core group should respond to the following questions:

- Should the school assess all management dimensions, or a selected set of dimensions?
- Do they agree with the good practice standards listed in the questionnaire? Should some standards be added, removed, or revised based on the local context?

- Should all school leaders and stakeholders respond to the questionnaire, or a selected few?

Developing a full timeline for the self-assessment and improvement process, including the time needed to conduct the initial assessment and act on its findings, is integral to ensuring that the team has a good understanding of the commitment required to stay on track with the process.

The administrator's guide describes four options for administering the questionnaire. They range from a single informant completing the questionnaire to a three-round Delphi study with multiple respondents. The questionnaire can be handed out to individuals and returned within a specified time, or it can be completed during a retreat or staff meeting, either individually or as a group.

The questionnaire asks respondents to rate each management practice or statement in two ways:

1. ***The perceived level of importance of that practice in delivering a quality educational program.*** Respondents should answer this question in relation to the expected results from the school management improvement process. For example, if stakeholders agreed that management improvements should result in an increased number of graduates from an academic program, then each item in the self-assessment tool should be rated in terms of how important the practice is for increasing the number of graduates.
2. ***The extent to which the practice currently exists at the institution.*** Respondents should indicate on a scale of 1 to 5 to what extent each practice is currently being implemented at the school, with 1 corresponding to not implemented at all, and 5 meaning fully implemented. If respondents don't know if a practice is being implemented, they can either investigate by interviewing others or consulting specific documents, or choose the ranking 3 (don't know) as their response.

Certain sections of the questionnaire, such as the financial resources dimension, can be assigned to specific staff members who have direct responsibility for and knowledge of the area. Other sections, such as the leadership and governance dimension, can be completed by the full leadership team. The approach taken will depend on the time and resources available to the school to complete the process, as well as the level of involvement and consensus required among staff and stakeholders to gain ownership and commitment to move forward with changes in management practices. It is important to note that as the number of management dimensions and respondents increase, so will the complexity and amount of time needed to complete the assessment and analyze the results.

The management improvement coordinator, identified in Step 1, should analyze and process the results in order to identify the major strengths and weaknesses. The administrator's guide provides instructions for analyzing and reporting the results of the assessment. The coordinator must first aggregate the results and display them in a way that will allow school leaders to easily

identify strengths and weaknesses. It is useful to examine the identified strengths because factors that contribute to the strengths may be applicable to finding solutions to identified weaknesses. Recognizing management practices that the school is doing well also highlights the positive aspects of the self-assessment and provides an opportunity to celebrate successes.

Step 4: Prioritize and Plan for Improvements

An analysis of self-assessment results will identify where good management practices are being followed and where they are not. If gaps between actual and good practices exist in several areas, school leaders will need to set priorities for where to focus their improvement efforts. A stakeholder meeting is recommended to review the self-assessment results and agree on priority areas for action.

The school management improvement coordinator should remind stakeholders that a repeated process of self-assessment and planning allows the school to focus on a few management practices in need of improvement during each cycle. The school can, therefore, focus on priority areas for action, knowing that additional priorities can be considered in future improvement cycles.

In setting priorities, two key questions should be asked. First, how important is the practice for achieving the agreed expected results or educational goals? Second, is the management practice under the control of the administrative unit? For example, a self-assessment conducted by a school of medicine may find inefficiencies in personnel management that are impeding progress toward its educational goals. However, the faculty of health sciences, not the medical school, might be responsible for all personnel-related functions. Changes to those management practices, therefore, would be outside the control of the medical school, and a decision would need to be made regarding whether the medical school should try to influence the practices of another administrative unit or focus its plan instead on practices over which it has full control.

Example: Priority-Setting at GCUC School of Nursing

Stakeholders at Garden City University College School of Nursing set three priority goals to be achieved over two years: 1) attract more applicants with higher academic qualifications to all of the school's academic programs; 2) increase enrollment at the school; and 3) create a new midwifery program. These goals were considered when assessing the school's management practices, and particularly when determining the level of importance of management practices within the dimensions of external relations, personnel, and students.

School leaders will then develop and implement a plan of action that clearly indicates the management dimensions for improvement, the planned actions in each dimension, and the time frame and persons responsible for those actions.

In addition to agreeing on a general improvement plan, school leaders should consider forming management improvement teams to focus on achieving one or more tasks within the plan.

Process improvement teams, as they are typically called, focus on creating or improving a specific business process. Frontline personnel and staff that are routinely involved with the priority areas selected for improvement should be included. A team may attempt to completely reengineer a process or work on incremental improvements. If attempting to introduce a completely new process or practice, the team should be cross-functional in composition, with representatives from a number of departments, units, and functions and with a range of skills related to the process to be improved. A detailed team charter provides the start-up direction a team needs to be successful in tackling an assigned task. More information about team charters can be found on the Public Health Foundation's website.[1]

Planning matrix

Appendix B provides a matrix that can be used to list priority areas for improvement, define the improvement goal for each area, and describe the specific actions to be taken, by when, and by whom. Looking into the dimensions in need of improvement, the stakeholders can plan for appropriate strategies or measures to improve the identified areas. Table 2 shows an example of the how the planning matrix was used by a school's leadership to define actions for increasing the number of students enrolled.

Table 2: Example of Planning Matrix for School Management Improvements

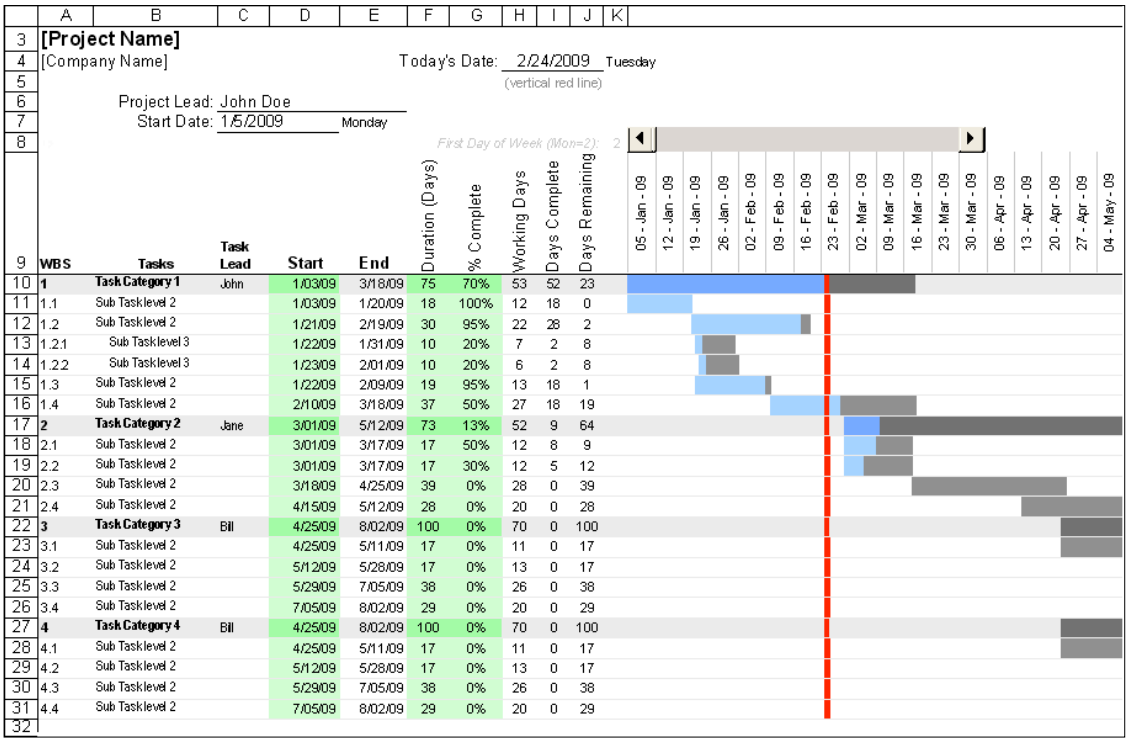
Management dimension	Area for improvement	Improvement goal	Indicator to measure progress	What action is planned?	By when?	Who is responsible?
Students	Recruiting and admitting new students	Increase total student body to 2,500 by 2014	Total number of students (measured each quarter)	• Targeted marketing campaign to potential students • Website updates • Financial support to students at risk of dropping out	2012–2014	• External Relations Office • Student Affairs Office

Step 5: Implement and Monitor Progress

Implementation of the action plan should be closely monitored and the extent to which the plan produces its intended effects evaluated. Clearly defined and measurable improvement goals, developed in step 4 above, will help school leaders evaluate whether or not management improvement activities achieve the expected results. To monitor and support the progress of planned actions, school leaders can create improvement teams (described in step 4) and apply project management tools, such as Gantt charts and responsibility charts. Gantt charts are particularly helpful for identifying the subactivities, time frame, personnel, and resources needed to achieve a task. Figure 4 shows an example of a Gantt chart created in Microsoft Excel.

[1] www.phf.org/resourcestools/Documents/The_Team_Charter.pdf; www.phf.org/resourcestools/Pages/Team_Charter.aspx

Figure 4: Example of a Gantt Chart for Project Management



[Project Name]
[Company Name]
Today's Date: 2/24/2009 Tuesday
(vertical red line)
Project Lead: John Doe
Start Date: 1/5/2009 Monday
First Day of Week (Mon=2): 2

WBS	Tasks	Task Lead	Start	End	Duration (Days)	% Complete	Working Days	Days Complete	Days Remaining
1	**Task Category 1**	John	1/03/09	3/18/09	75	70%	53	52	23
1.1	Sub Tasklevel 2		1/03/09	1/20/09	18	100%	12	18	0
1.2	Sub Tasklevel 2		1/21/09	2/19/09	30	95%	22	28	2
1.2.1	Sub Tasklevel 3		1/22/09	1/31/09	10	20%	7	2	8
1.2.2	Sub Tasklevel 3		1/23/09	2/01/09	10	20%	6	2	8
1.3	Sub Tasklevel 2		1/22/09	2/09/09	19	95%	13	18	1
1.4	Sub Tasklevel 2		2/10/09	3/18/09	37	50%	27	18	19
2	**Task Category 2**	Jane	3/01/09	5/12/09	73	13%	52	9	64
2.1	Sub Tasklevel 2		3/01/09	3/17/09	17	50%	12	8	9
2.2	Sub Tasklevel 2		3/01/09	3/17/09	17	30%	12	5	12
2.3	Sub Tasklevel 2		3/18/09	4/25/09	39	0%	28	0	39
2.4	Sub Tasklevel 2		4/15/09	5/12/09	28	0%	20	0	28
3	**Task Category 3**	Bill	4/25/09	8/02/09	100	0%	70	0	100
3.1	Sub Tasklevel 2		4/25/09	5/11/09	17	0%	11	0	17
3.2	Sub Tasklevel 2		5/12/09	5/28/09	17	0%	13	0	17
3.3	Sub Tasklevel 2		5/29/09	7/05/09	38	0%	26	0	38
3.4	Sub Tasklevel 2		7/05/09	8/02/09	29	0%	20	0	29
4	**Task Category 4**	Bill	4/25/09	8/02/09	100	0%	70	0	100
4.1	Sub Tasklevel 2		4/25/09	5/11/09	17	0%	11	0	17
4.2	Sub Tasklevel 2		5/12/09	5/28/09	17	0%	13	0	17
4.3	Sub Tasklevel 2		5/29/09	7/05/09	38	0%	26	0	38
4.4	Sub Tasklevel 2		7/05/09	8/02/09	29	0%	20	0	29

05 - Jan - 09 | 12 - Jan - 09 | 19 - Jan - 09 | 26 - Jan - 09 | 02 - Feb - 09 | 09 - Feb - 09 | 16 - Feb - 09 | 23 - Feb - 09 | 02 - Mar - 09 | 09 - Mar - 09 | 16 - Mar - 09 | 23 - Mar - 09 | 30 - Mar - 09 | 06 - Apr - 09 | 13 - Apr - 09 | 20 - Apr - 09 | 27 - Apr - 09 | 04 - May - 09

Source: Wittwer n.d., http://www.vertex42.com/ExcelTemplates/excel-gantt-chart.html

In addition to implementing and monitoring the improvement plan, school leaders should determine the frequency with which they will conduct the self-assessment, planning, and implementation cycle. The frequency of self-assessments will depend on the breadth of the initial assessment and the complexity of the resulting implementation plan. For example, a school may choose to conduct focused assessment and planning cycles for single management dimensions on a quarterly basis. Or they may choose to conduct a full assessment of all management dimensions every two or three years. In the case of Garden City University College School of Nursing, school leaders agreed to conduct a broad assessment and planning exercise covering all nine management dimensions every two years.

To monitor progress toward goals of one year or more, school leaders should consider developing and using an educational dashboard (see Dean's Dashboard section below for more information). Dashboards are particularly useful for measuring progress toward a school's medium- or long-term strategic plan.

Dean's Dashboard

Educational dashboards are designed to pull information from different education management information systems—such as finance, admissions, personnel, and infrastructure management systems—and display it in simple charts and graphs. Dashboards help to manage and make comprehensible the large amounts of data that school leaders must use to make decisions. By

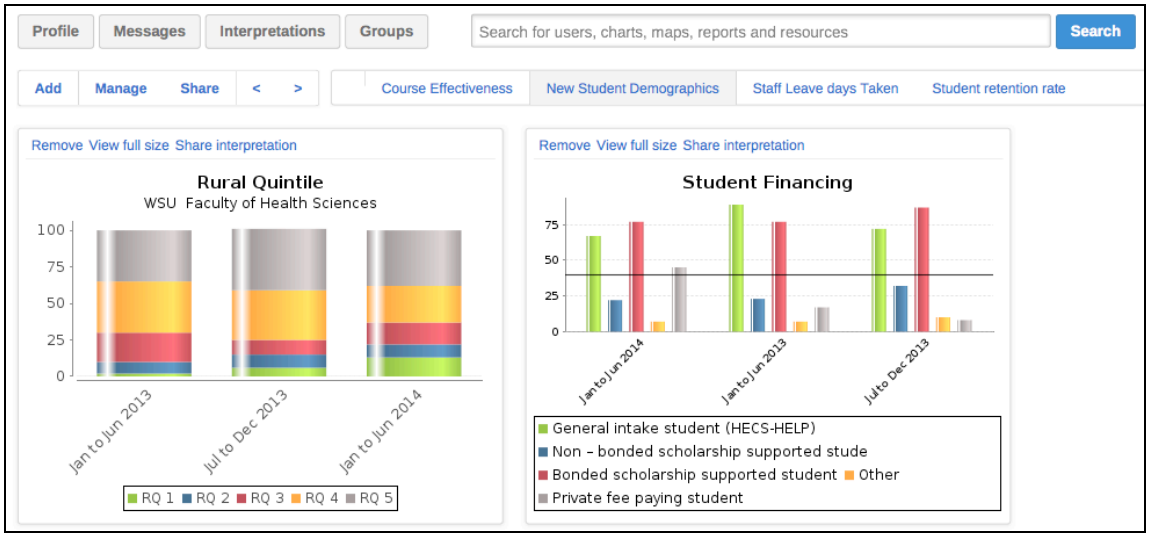
translating column after column of complicated statistical analysis into clear visual representations, a dashboard empowers school leaders to systematically define strategic goals and routinely monitor progress toward achieving them. Charts and graphs stored in a dashboard measure and display progress and trends at the chosen level of a department, school, faculty, or other larger group. As high-level trends in school statistics are aggregated and visually highlighted, school leaders are able to see and quickly respond to evolving needs.

The following are examples of goals that can be tracked over time by a school's educational dashboard:

- ***Trends over time:*** A school's goal is to increase annual enrollment numbers. The dashboard charts the number of students newly enrolled each semester.
- ***Comparisons between groups:*** A university aims to rationalize housing use, to alleviate crowding in certain hostels. The dashboard compares occupancy rates in Hostel A to those in Hostel B and Hostel C.
- ***Comparisons within groups:*** A school aims to predict yearly income. The dashboard compares the total amount of revenue expected with the amount received in real time.

Dashboards are not meant to track single individuals or transactions. Rather, they consolidate and aggregate information collected through other data management systems. These include data systems used for finance and accounting, facilities and estate management, student information management, student records, learning management, student assessment, human resources management, alumni management, or any type of enterprise resource planning (ERP) system. Figure 5 shows sample graphical representations of student origins and financing based on information collected through a school's student admissions and finance systems.

Figure 5: Dashboard Examples



Source: J. Iputo, Walter Sisulu University
Note 1: With the goal of increasing the enrollment of students from rural areas, the school monitors the origin of its incoming student body according to rural quintile (RQ), with RQ1 representing students from the most rural areas, and

RQ5 the most urban. Note 2: With the goal of predicting cash availability, the school monitors the sources of student tuition and fees: through the student loan/discount HECS-HELP program; from scholarships (with or without associated "bonding" arrangements); or with personal private funds.

Capacity*Plus* applied a key principle for digital development—reuse and improve—to adapt the powerful District Health Information System, Version 2 (DHIS 2) software for use as a Dean's Dashboard. While there are a variety of software dashboards available, the project sought one using open source technology as well as supported by a large, international community of developers and implementers. Moreover, the team recognized the need to have a system that could be used by a small school as well as a major institution, with features spanning the needs likely to be found anywhere along that spectrum. DHIS 2 provides an open source, cost-effective, and user-friendly software system to track selected measurement indicators and take corrective action in a timely manner. With guidance from Capacity*Plus,* the two pilot institutions were able to quickly master the DHIS 2 interface. They found it easy to set up data and reports within the system, and required few resources to expand its usefulness. More information about how to download and customize a Dean's Dashboard can be found on the Capacity*Plus* website, including links to a basic version of the system and a step-by-step manual for customizing and expanding its use.

Complementary Approaches and Tools

School leaders can successfully use the school management improvement framework in conjunction with other approaches and tools that aim to scale up and transform health workforce education and training, based on needs identified locally and a school's strategic goals. For example, application of the school management improvement framework could be further strengthened by providing management training for school leaders, using the framework as an extension of the Capacity*Plus* Bottlenecks and Best Buys Approach, and applying a variety of resources and tools designed to implement good management practices, such as a facility audit tool, a staff assessment template, an annual report template, and an effective meetings guide. Prior to conducting any assessment, a school's leadership should carefully define the purpose and objectives of the assessment, and ensure that only the data and information needed to achieve those specific objectives are collected. Data on a small set of tracer indicators, such as progression rates from one year of study to the next or staff turnover rates, are much easier to manage than a large data set. In addition, a school is more likely to have the capacity to respond to a series of small, focused assessments over an extended period of time than it would to a large assessment covering several aspects of education at one time.

Management Training

As management is integral to their job functions, school leaders such as deans, directors, and department heads need opportunities to develop their management skills. Generic competencies in managing people, resources, clients, and self are needed at all levels of academic institutions. Some key management skills include recognizing what is in one's sphere of control and what is not; structuring the work environment to optimize opportunities to match staff talents, skills, and perspectives to the needs of the task; and documenting processes to

facilitate the successful transition from one manager to another. School leaders also need incentives and rewards for practicing good management skills, such as opportunities for promotion and further development.

Management skills can be developed through formal training programs and informal mentoring or coaching facilitated by experienced managers. These approaches should include opportunities for self-reflection and feedback from colleagues. In addition, exposure to management and operational practices, such as through the organization of "open days" that allow staff to visit and learn from other units or departments, or sharing responsibilities through a rotation system, can help school leaders develop essential management skills.

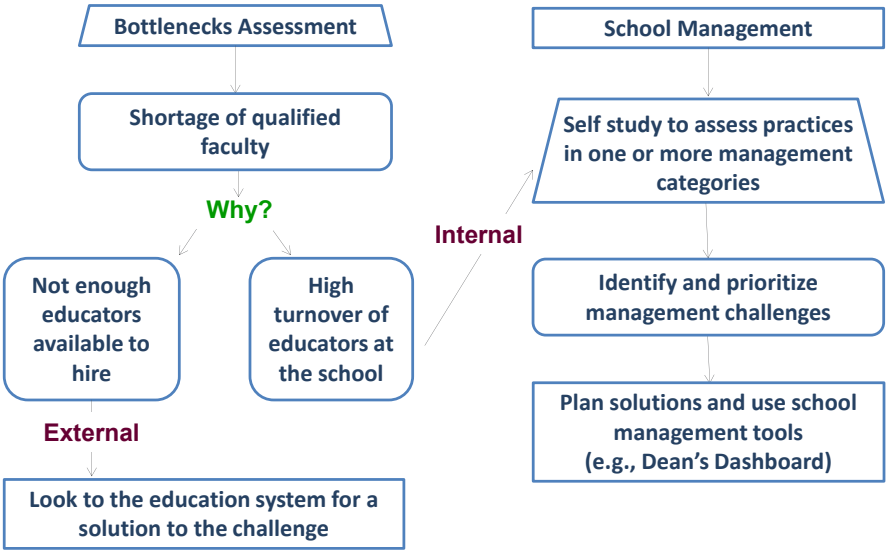
Business schools frequently offer training programs that can be used to build management competencies among school leaders. A number of universities offer online management courses as well as group-based courses. Examples of online management courses can be found at www.coursera.org and www.education-portal.com. Two examples of group-based courses are: 1) the International Deans' Course at the Osnabrück University of Applied Sciences in Germany, which offers training in higher education management for newly appointed deans and heads of departments from East Africa and Southeast Asia); and 2) the three-week certificate course in leadership and management of higher education institutions offered by the Maastricht School of Management.

The Bottlenecks and Best Buys Approach

The Capacity*Plus* Bottlenecks and Best Buys Approach aims to help educational institutions identify obstacles to increasing the production of competent and qualified graduates that can be overcome through limited yet strategic investments. This approach is intended as a broad assessment of a program or programs to determine bottlenecks to achieving goals set internally. It will assist a school in identifying impediments to those goals, which may or may not include the need for increased investment in building the capacity of management. Most bottlenecks can be overcome through additional investments. However, some bottlenecks, such as a high turnover of teaching staff, will likely require some changes in management practices.

If a school's leaders have realized—through the use of the Bottlenecks and Best Buys Approach or through some other means—that their management practices could be strengthened, the school management improvement framework can be used to further examine underlying causes and potential solutions to selected challenges. For example, management practices that could help to reduce staff turnover include better definition of career pathways for teachers, more opportunities for continuing professional development, pay for performance, or better working hours. Although the school management framework and the Bottlenecks and Best Buys Approach are separate tools that can be used independently, they are designed to allow school leaders to easily move from one to the other if desired. Figure 6 shows one example of how a challenge identified through a bottlenecks assessment could be overcome through further assessment and action that focuses on strengthening school management practices.

Figure 6: Example of How the Bottlenecks and Best Buys Approach Can Be Linked to the School Management Framework and Tools



Other Management Tools

Appendix C provides a list of additional tools for implementing good management practices, including monitoring and evaluating progress. These tools were collected during our work with the pilot schools and are related to each of the nine school management dimensions. They include items such as a facility audit tool, a staff assessment template, a department faculty annual report template, and an effective meetings guide. Whenever possible, we provide links to websites where the full versions of tools can be found. The list should not prevent the school from using other tools that may be beneficial; there may be tools that the school has used or is aware of, or that have been subsequently developed and made available, which can make the effort more relevant to the school's situation. This list will be further developed and expanded on the school management section of the Capacity*Plus* website as more experience is gained in implementing the school management improvement framework.

Conclusion

The world needs more health workers who are able to provide high-quality care where the population's health needs are greatest. Capacity to increase the supply of health workers has been constrained by the limited number of educational institutions and the scarcity of available resources. Using the guidance in this document, health professional school leaders can strengthen their management practices in order to make the most of the resources—human, material, financial, and knowledge—needed to deliver high-quality educational programs. By managing their schools more efficiently and effectively, school leaders will be in a solid position to scale up the production of relevant, competent, and qualified graduates.

External stakeholders from national and international governmental organizations, technical agencies, regulatory bodies, or nongovernmental associations focused on education or health, as well as donors and financing agencies interested in investing in health workforce education, can also use this guidance to support schools in initiating or sustaining efforts to improve their management practices.

REFERENCES

Bailey, Rebecca J., and Kate Tulenko. 2015. Scaling up health workforce education and training: Guide for applying the Bottlenecks and Best Buys approach. Capacity*Plus*/IntraHealth International. http://www.capacityplus.org/guide-for-applying-the-bottlenecks-and-best-buys-approach.

Baldrige Performance Excellence Program. 2013. *2013–2014 education criteria for performance excellence*. Gaithersburg, MD: US Department of Commerce, National Institute of Standards and Technology.

Campbell, Jim, Gilles Dussault, James Buchan, et al. 2013. A universal truth: No health without a workforce. Forum report, Third Global Forum on Human Resources for Health, Recife, Brazil. Geneva, Global Health Workforce Alliance and World Health Organization. http://www.who.int/entity/workforcealliance/knowledge/resources/GHWA-a_universal_truth_report.pdf?ua=1.

Council for the Advancement of Standards in Higher Education (CAS). 2012. *CAS professional standards for higher education (8th edition)*. Washington, DC: CAS.

Crisp, Nigel, and Lincoln Chen. 2014. "Global supply of health professionals." *The New England Journal of Medicine* 370: 950-957. http://www.nejm.org/doi/full/10.1056/NEJMra1111610.

Frenk, J., L. Chen, Z.A. Bhutta, et al. 2010. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. Cambridge, MA: Harvard University Press. http://www.healthprofessionals21.org/index.php/about/lancet-report (accessed May 27, 2014).

Goldfarb, S., and G. Morrison. 2014. "Continuous curricular feedback: A formative evaluation approach to curricular improvement." *Academic Medicine* 89: 264-269.

Gormley, W., and J. McCaffery. 2011. Guidelines for forming and sustaining human resources for health stakeholder leadership groups. Washington, DC: Capacity*Plus*/IntraHealth International. http://www.capacityplus.org/files/resources/Guidelines_HRH_SLG.pdf.

Lande, Robert E. 2002. Performance improvement. Population Reports, Series J, No. 52. Baltimore, MD: The Johns Hopkins Bloomberg School of Public Health, Population Information Program. http://info.worldbank.org/etools/docs/library/48529/Pop%20Report%20on%20Performance.pdf.

Mullan, Fitzhugh, and Seble Frehywot. 2010. *The Sub-Saharan African Medical School Study: Data, observation, and opportunity*. Washington, DC: The George Washington University Medical

Center, University of Pretoria, and the Bill & Melinda Gates Foundation. https://smhs.gwu.edu/medicine/sites/medicine/files/125.pdf (accessed February 21, 2013).

Prince Mahidol Award Conference (PMAC). 2014. Report on the 2014 conference on transformative learning for health equity. Bangkok, Thailand: PMAC. http://www.pmaconference.mahidol.ac.th/index.php?option=com_docman&task=doc_download&gid=995.

Schloss, Patrick J., and Kristina M. Cragg, eds. 2013. *Organization and administration in higher education*. New York, NY: Routledge.

Trochim, W., J.B. Urban, M. Hargraves, C. Hebbard, J. Buckley, T. Archibald, M. Johnson, and M. Burgermaster. 2012. The guide to the systems evaluation protocol. Ithaca, NY: Cornell Digital Print Services. https://core.human.cornell.edu/documents/SEPGuide2_small.pdf.

Vachon, Brigitte, Bruno Désorcy, Michel Camirand, et al. 2013. "Engaging primary care practitioners in quality improvement: Making explicit the program theory of an interprofessional education intervention." *BMC Health Services Research* 13: 106. http://www.biomedcentral.com/1472-6963/13/106.

Wittwer, Jon. n.d. Gantt chart template for Excel. Vertex42. http://www.vertex42.com/ExcelTemplates/excel-gantt-chart.html (accessed June 29, 2015).

World Health Organization. 2013. Transforming and scaling up health professionals' education and training: World Health Organization guidelines 2013. Geneva, Switzerland: World Health Organization. http://www.who.int/iris/bitstream/10665/93635/1/9789241506502_eng.pdf?ua=1.

World Health Organization. 2011. Transformative scale up of health professional education: An effort to increase the numbers of health professionals and to strengthen their impact on population health. Geneva, Switzerland: World Health Organization. http://whqlibdoc.who.int/hq/2011/WHO_HSS_HRH_HEP2011.01_eng.pdf?ua=1.

World Health Organization. 2010. Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva, Switzerland: World Health Organization. http://whqlibdoc.who.int/publications/2010/9789241564014_eng.pdf?ua=1.

World Health Organization. 2007. Everybody's business: Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva, Switzerland: World Health Organization. http://www.who.int/healthsystems/strategy/everybodys_business.pdf?ua=1.

World Health Organization. 2006. The world health report 2006: Working together for health. Geneva, Switzerland: World Health Organization. http://www.who.int/whr/2006/en/.

World Health Organization and the Office of the High Commissioner for Human Rights (OHCHR). 2007. The right to health: Joint fact sheet 323. Geneva, Switzerland: WHO and OHCHR. http://www.who.int/mediacentre/factsheets/fs323_en.pdf.

Appendix A: Stakeholder Identification and Engagement

Individuals and groups that have a vested interest in your institution and its academic programs are stakeholders. Primary or internal stakeholders are those directly affected by change, such as deans, administrators, teachers, the oversight group responsible for a school, and students. They also include administrators, staff, and teachers at clinical practice facilities. Secondary or external stakeholders are those affected in an indirect or limited way, such as licensing boards, regulatory bodies, professional associations, public officials, alumnae, special interest groups, funding organizations, and community groups. In general, the interests of secondary stakeholders need to be considered, but representatives of these groups are seldom present in regular stakeholder meetings. Key stakeholders are those who can significantly influence school management practices, or are important to their success, or both.

Stakeholders should be engaged in all steps of the school management improvement process. It is, therefore, important to identify early who the stakeholders are and how they should be engaged at different stages of the process.

Identify Stakeholders

A school leader, such as the school management improvement coordinator, should conduct an inclusive brainstorming activity to identify all of the potential people or groups that have a stake in your school. The exercise should result in a visual depiction of all stakeholders and their relationship to each other. It is important to understand that there is no magic list of stakeholders. The final list will depend on your school, its educational mission and objectives, and its surrounding environment. The list should not remain static. Instead, it should be regularly updated as the school and its environment evolve, and as stakeholders make decisions or change their opinions.

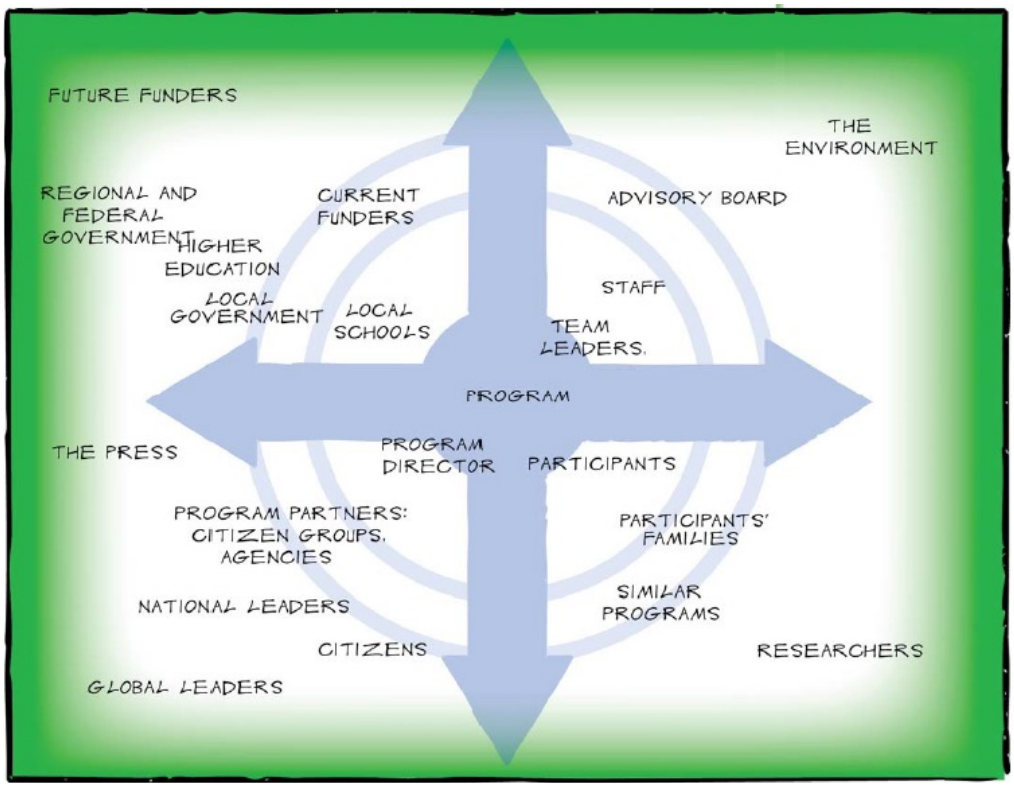
In building a stakeholder map, first consider *all* those who may have any stake in your institution or school. If this activity is done together with a group of colleagues, the group should be encouraged to name every possible person or organization at all levels of the system in which your school exists. For example, they should consider students and their families; the school's employees and board of directors; the school's suppliers of equipment, materials, teacher training, and funding; surrounding communities and health facilities; government agencies, regulatory bodies, and professional and educational associations; and civil society organizations such as faith-based organizations and labor unions (see example in Figure 1).

The following questions will help guide the conversation:

- Who are the people/types of people with a stake in the school?
- Who benefits from the school?
- Who is responsible for the school?
- Who takes part in its programs?

- Who encounters those who take part?
- Who experiences it indirectly?
- Whose lives are affected by it?
- Who pays for it?
- Who makes decisions about it?
- Who else cares about it (at least its general scope)?

Figure 1: Example Stakeholder Map



Source: Trochim et al. 2012. The guide to the systems evaluation protocol. Ithaca, NY: Cornell University. https://core.human.cornell.edu/documents/SEPGuide2_small.pdf

If a group is involved in this exercise, allow each group member to list stakeholders on small pieces of paper or sticky notes so that the stakeholder names can be physically moved on a diagram. Next, ask them to place the names on a wall or whiteboard, grouping stakeholders near similar stakeholders. Rather than taking turns in a formal sense, participants should add items as they find a place to do so. It is important to allow each group member to use her/his own criteria for similarity so that affinity clusters develop organically. In general, stakeholders most centrally involved with your school should be near the center of your map, with others who are most remotely related in outer circles.

After you have completed placing names on the draft map, assign identifiers or titles to the clusters that have developed. This may help you to identify further key stakeholders who were not considered. The most important thing is to identify *all* relevant stakeholders and ensure that your colleagues are comfortable with the map that results from the exercise. *Circle key stakeholders* to highlight those individuals or groups who must be involved, consulted, informed, or observed in order to ensure the success of the school management improvement effort. Think of key stakeholders as strategic partners. They may be key decision-makers, key implementers, or key customers of your services and activities. They include those who could be important contributors to solutions and facilitators of change management, or who could potentially block action in certain areas. If needed, use the Stakeholder Mapping Template provided in this appendix to help you complete your map.

Draft a Stakeholder Engagement Matrix

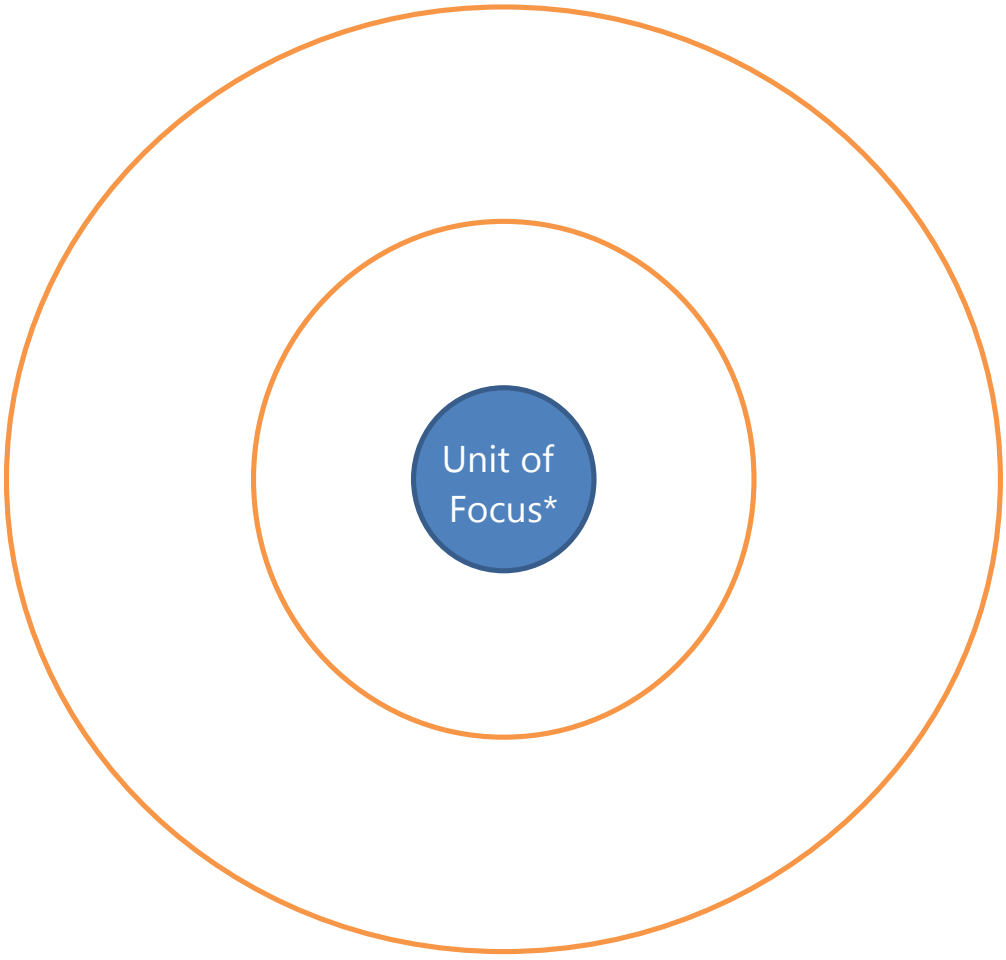
Stakeholder engagement is the process used to engage relevant stakeholders for the purpose of achieving accepted outcomes. Stakeholder engagement builds ownership of a process, fosters realistic and appropriate improvement solutions, and helps to remove obstacles to organizational change. In selecting and assembling stakeholders, it is important to be inclusive, but there is also a need to balance the principle of inclusion with the practicality of having a group size that is manageable and effective. A stakeholder engagement matrix identifies the best ways to engage each key stakeholder during every step of the process. Levels of engagement include involving the stakeholder as a partner, managing through consultation, acknowledging by informing, or monitoring through observation. At any stage of the process, different stakeholders may need to participate in different ways, depending on the purpose and nature of an activity.

The Stakeholder Engagement Template included in this appendix will help you track the decisions made regarding how each key stakeholder should be engaged at each stage of the process. For each stage, list key stakeholders in the appropriate boxes, depending on whether the stakeholder should be directly involved in the decision-making process, consulted prior to making a final decision, informed about the decision, or observed—especially for their reaction to any decision. The engagement matrix should be revised and updated as the process evolves and more information and feedback is obtained from different stakeholders.

Further advice regarding managing large stakeholder groups so that they function well, have a positive impact, and avoid typical difficulties can be found in Capacity*Plus*'s *Guidelines for Forming and Sustaining Human Resources for Health Stakeholder Leadership Groups* (Gormley and McCaffery 2011). This document is more broadly relevant to stakeholders for national-level goals but contains useful recommendations.

Stakeholder Mapping Template

Unit of Focus: _____ Date: _____



* Unit of focus: The department, school, faculty, college, or other administrative unit where school management practices will be improved. Refer to Step 2, Identify and Engage Stakeholders, for more details.

Stakeholder Engagement Template

Institution: _____ **Date:** _____

Type of Engagement / **Stage in the Process**	**Involve**	**Consult**	**Inform**	**Observe**
1. Agree on the unit of focus for school management improvements				
2. Agree on the scope and frequency of management improvement cycles				
3. Adapt the self-assessment questionnaire				
4. Conduct a self-assessment				
5. Select priorities for school management improvements				
6. Develop a plan of action for school management improvements				
7. Implement the plan and monitor progress				

*For each stage in the process, list key stakeholders in the corresponding boxes based on the need to **involve** them in the decision-making process for that stage, **consult** them before making a final decision, **inform** them of the final decision for that stage, and/or **observe** their reaction to the final decision.*

APPENDIX B: PLANNING MATRIX

Areas for Improvement

Priority Areas for Improvement						
Management dimension*	Area for improvement	Improvement goal	Indicator to measure progress	What action is planned?	By when?	Who is responsible?
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
Add more rows if needed…						

Based on the **management dimensions found in the self-assessment tool: 1) leadership and governance; 2) strategic planning; 3) external relations; 4) financial resources; 5) personnel; 6) students; 7) equipment and materials; 8) facilities and infrastructure; and 9) evaluation and knowledge management.*

Areas of Strength to Continue to Build

High-Importance/Priority Areas of Strength (Rated as high importance on the self-assessment tool)						
Management dimension*	Area of strength	Improvement goal	Indicator to measure progress	What action is planned?	By when?	Who is responsible?
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
Add more rows if needed…						

Based on the **management dimensions found in the self-assessment tool: 1) leadership and governance; 2) strategic planning; 3) external relations; 4) financial resources; 5) personnel; 6) students; 7) equipment and materials; 8) facilities and infrastructure; and 9) evaluation and knowledge management.*

APPENDIX C: USEFUL SCHOOL MANAGEMENT TOOLS

For widely applicable information about management of personnel and of complex organizations, Capacity*Plus* recommends the following books, reports, and articles:

- Cain, Susan. 2012. *Quiet: The power of introverts in a world that can't stop talking*. New York, NY: Crown Publishing Group.
- Collins, Jim. 2001. *Good to great: Why some companies make the leap…and others don't*. New York, NY: HarperCollins.
- Hanson, Daniel S. 1996. *A place to shine: Emerging from the shadows at work*. Abingdon, UK: Routledge.
- Grant, Adam M. 2013. *Give and take: A revolutionary approach to success*. New York, NY: Viking Press.
- Soucat, Agnes, Richard Scheffler, and Tedros Adhanom Ghebreyesus, eds. 2013. The labor market for health workers in Africa: A new look at the crisis. Washington, DC: The World Bank.
- Etzkowitz, Henry, and Loet Leydesdorff, 2000. "The dynamics of innovation: From national systems and 'mode 2' to a triple helix of university–industry–government relations." *Research Policy* 29, no. 2.
- World Health Organization. 2010. Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva, Switzerland: World Health Organization.

Capacity*Plus* continues to gather and evaluate tools that would be useful for health educational institutions' management. What follows is a table of examples of templates, questionnaires, and other easily adapted management tools that can be found in the Capacity*Plus* school management toolkit. Please see the Capacity*Plus* website section on school management for the most up-to-date inventory of school management tools.

Tool title	Synopsis	Dimension
Accreditation questionnaire for new programs	A checklist and questionnaire for use by school administrators requesting accreditation by relevant bodies. Lists those elements likely to be required/requested to support application for accreditation.	Strategic planning Leadership and governance
Admissions procedures	A template that can be easily modified to explain a school's admission policies, the way it chooses students from among its applicants, and how a potential student can apply. Useful for answering potential students' questions about the application process and his/her "fit" with a school's selection criteria and mission.	Students External relations
Advisory committee policy	Defines what advisory committees are, what they do, and how they are formed. Provides a template for	Leadership and governance

Tool title	Synopsis	Dimension
	formulation of a new advisory committee and advises administrators seeking to hold committee meetings.	
Annual academic faculty review policy and forms	A template for use to review the performance of teaching staff. Can be used to define "quality of teaching" and the principles of evaluation per an institution's mission and vision. Lays out the procedure for assessment, and allows institution to set evaluative criteria.	Personnel
College registrar - staff assessment template	A rating sheet template for use in assessing a registrar's performance. Includes elements of collaboration and quality of administrative work.	Personnel
Competencies required of the contemporary physician	Example of statement of competencies that would be expected of a physician. Useful for planning/creating competency-based curricula.	Strategic planning Students
Computer systems backup policy and procedure	Example of a policy and system for backing up computer drives to prevent loss of information.	Equipment and materials Evaluation and knowledge management
Computer use policy - alternate	Example of a policy for computer purchase and use. Includes examples of processes that can be used for procuring, maintaining, and disposing of computer equipment.	Equipment and materials
Computer use rules - policy	Example of a policy for computer use by staff and students at a school. Notes those who may use computers, and what types of use are permissible; as well as why a person may be denied access to computers.	Equipment and materials
Corporate identity handbook - Walter Sisulu University	Example of a policy for use of a school's logo and brand. Indicates how and when a logo should appear.	External relations Leadership and governance Strategic planning
Counseling employees - the 2-minute challenge	A way to have a brief and meaningful conversation that identifies a specific problem and redirects an employee or student. The "2-Minute Challenge" can improve communications and perhaps mitigate any further action, including formal disciplinary action.	Personnel Students
Curriculum development	Chapter 11 of Handbook of Teaching and Learning in Medicine. Defines curriculum and its elements, recommends a six-step process to developing a curriculum.	Strategic planning Evaluation and knowledge management
Curriculum vitae faculty guidelines	Template for academic faculty member to create a professional CV/resumé.	Personnel
Deans - staff assessment template	A rating sheet template for use in assessing a dean's performance. Includes elements of collaboration, supervision, and quality of administrative work.	Personnel

Tool title	Synopsis	Dimension
Department annual report template	A template useful for periodic reporting of certain important information about an academic department's staffing, students, research, and publication output; as well as for overall self-examination of departmental mission achievement.	Leadership and governance Personnel Students
Department heads manuals - AAMC list	A list of AAMC manuals available for sale. Specifically aimed at developing successful department chairs. Includes descriptions and websites. Manuals offer advice, good practice, and sample documents and policies that can be adapted for local use.	Personnel Leadership and governance
Department publications survey	Template for an inventory of all published research (articles, books, book chapters, conference presentations). Can be used in assessment of department performance.	Evaluation and knowledge management Personnel
Departmental annual report - database outline	Template of an evaluation for schools performing periodic review of department/school functioning. Includes infrastructure, mission, faculty, student, research, and clinical service elements.	Evaluation and knowledge management Students Facilities and infrastructure
Departmental faculty orientation checklist	An example of a checklist to ensure that new faculty are fully oriented to their school. Includes elements to make sure faculty are aware of pay/benefits, have needed email and phone information, know how to get supplies, etc.	Personnel
Departmental faculty report annual	A way to track faculty recruitment, promotion, recognition, and retention factors.	Personnel
Department head self-assessment - clinical department	A self-rating sheet for use by school leaders to begin the process of staff personnel assessment. Asks clinical department leadership to consider their performance in several key areas including administration, personnel management, and academics.	Personnel Leadership and governance
Department heads assessment - general guidelines	A performance assessment method for senior administrators including department heads, deans, registrars, etc. States the aims of a personnel assessment, the items on which s/he will be assessed, and the process.	Personnel Leadership and governance
Department heads evaluation process - overview	Instructions to leaders performing assessments of personnel. Can be used as a cover letter or instruction sheet to facilitate performance review processes.	Personnel Leadership and governance
Department heads performance assessment - clinical department	A rating sheet to be used in assessing the performance of clinical department heads. Includes elements of administration, academic leadership, and collaboration.	Personnel Leadership and governance
Department heads performance assessment - clinical department by	A rating sheet to be used by associate deans and others to assess the quality of an individual's	Personnel Leadership and

Tool title	Synopsis	Dimension
associate deans and others	performance over an academic year. Includes elements of administration, leadership, and academic contribution.	governance
Department head - staff assessment template	A rating sheet with 1-5 scale for assessing the performance of a department head. Includes elements of leadership, supervision, and logistics.	Personnel Leadership and governance
Diagnostics - auxiliaries	For focused self-assessment of several management dimensions. A data entry form for use in estimating the cost-benefit information necessary for making decisions about residences, food services, and bookstores.	Financial resources Equipment and materials Facilities and infrastructure
Diagnostics - computers and communication	For focused self-assessment of several management dimensions. A data entry form for use in estimating the cost-benefit information necessary for making decisions about computers, phones, and other data systems.	Financial resources Equipment and materials Facilities and infrastructure
Diagnostics - marketing	For focused self-assessment of several management dimensions. A data entry form for use in tracking the effectiveness of a school's marketing plan. Can be used to track the number of inquiries by potential students, the number of applicants, admittances, enrollees, and their relative qualifications over time.	Students Evaluation and knowledge management External relations
Diagnostics - policies and procedures	For focused self-assessment of two management dimensions. A data entry form for use in reviewing the presence and communication of key policies. Allows self-assessment of the existence and distribution of policies related to business issues, academic handbooks, administrative manuals, mission, and annual reports.	Evaluation and knowledge management Strategic planning
Diagnostics - marginal analysis	A decision-making tool. Allows leaders to track the net costs and gains associated with different enrollment, personnel sizes, and other investments by comparing one year to another.	Strategic planning Financial resources
Diagnostics checklist	A simple checklist for school self-evaluation. Asks basic questions about finances, marketing, and management	Financial resources External relations Leadership and governance
Diagnostics - academic programs	A data form useful for tracking academic program objectives, course offerings, student interest, and responsiveness to alumni, employer, and advanced academic institution interests.	Strategic planning External relations
Effective meetings guide	Recommendations and things to consider when planning and holding meetings—such as whether the meeting goals are needed and can be best met with a meeting—including guidance on meeting efficiency.	Leadership and governance
Innovative financing options for the preservice education of health professionals	Proposes 19 sources of public and private financing for health workforce education that have been applied successfully in a variety of contexts and institutions.	Financial

Tool title	Synopsis	Dimension
Learning for performance: A guide and toolkit for health worker training and education programs	Presents a systematic instructional design process to help educators connect learning to specific job responsibilities and competencies and create effective educational approaches to develop those competencies.	Strategic planning
Rapid retention survey toolkit: Designing evidence-based incentives for health workers	A step-by-step guide to optimizing for context and performing a discrete choice experiment to determine health worker preferences for retention. Can be used to consider faculty retention issues.	Personnel
Strengthening the health worker pipeline through gender-transformative strategies	Provides an overview of how gender discrimination affects health professional students and faculty, and recommendations for preservice education institutions and other stakeholders to address these challenges.	Personnel Students
Team charter overview and template	Explains how to create a team charter that describes the mission of a team and how it is to be accomplished, including the measures of success, constraints/limits, and available resources.	All dimensions

CapacityPlus is the USAID-funded global project uniquely focused on the health workforce needed to achieve the Millennium Development Goals. Placing health workers at the center of every effort, CapacityPlus helps countries achieve significant progress in addressing the health worker crisis while also having global impact through alliances with multilateral organizations.

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

The CapacityPlus Partnership

CapacityPlus
IntraHealth International

1776 I Street, NW, Suite 650
Washington, DC 20006
T (202) 407-9473
F (202) 223-2295

6340 Quadrangle Drive, Suite 200
Chapel Hill, NC 27517
T (919) 313-9100
F (919) 313-9108

capacityplus.org
info@capacityplus.org