Operational Guidance for Maternal and Child Survival Country Programs: Pre-Service Education
Current Evidence and Recommendations to Support Design and Implementation of Pre-Service Education Programs

www.**mcsprogram**.org

This operational guidance presents evidence-based recommendations for pre-service education of health care providers affiliated with the Maternal and Child Survival Program (MCSP). This guidance can be used in MCSP country programs to strengthen pre-service education systems.

Pre-service education is the curriculum of studies that prepares a health provider with the competencies required for entry into a health profession. These programs include a combination of theoretical knowledge and practice experience. Pre-service education focuses on competency development, whereas in-service training is used to support competency-maintenance for practicing health workers.

This operational guidance is based on the conceptual framework developed by Jhpiego (2012) based on an integrative review of the literature (see Figure 1). The conceptual model identifies direct and indirect factors that influence graduate competence and points to the expected outcome of producing competent graduates. A learner-centered approach is the foundation for pre-service strengthening efforts. In addition, guidance from the Pre-Service Education Roadmap (Jhpiego, 2011) is also integrated.

Country programs select interventions from the direct factors in the conceptual model (e.g., clinical practice sites, students, teachers/tutors/preceptors, infrastructure and management, and curriculum) to strengthen the pre-service education system based on the professional board or council and national priorities.

Figure 1. Conceptual Model: The Health Impacts of Pre-Service Education
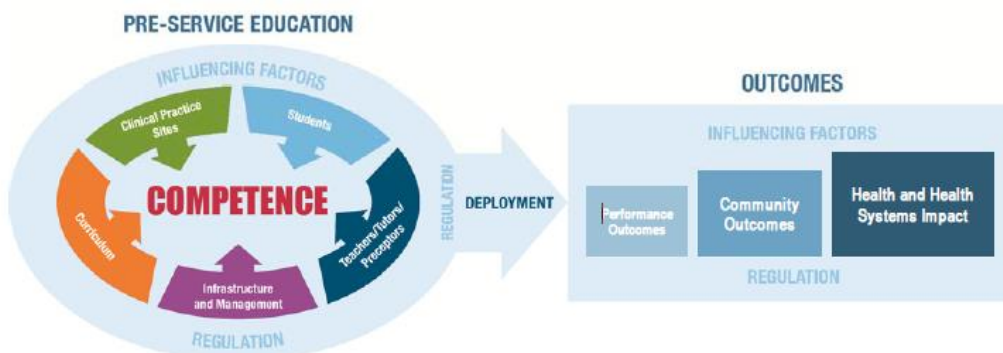
A new, landmark report released late in 2016 by the United Nations High-Level Commission on Health Employment and Economic Growth calls out the critical need to invest in human resources for health (WHO, 2016). This report notes a staggering estimate that if current trends continue, the world will be short 18 million health workers needed to deliver essential health services by 2030. The report calls us to "Scale up transformative, high-quality education and lifelong learning so that all health workers have skills that match the health needs of populations and can work to their full potential."

Current Evidence

Jhpiego performed an integrative review of the literature to analyze factors contributing to quality pre-service education and created a learner-centered conceptual model with competent graduates as the end goal. The conceptual model shows the links between essential elements of quality pre-service education and desired outcomes (Johnson et al., 2013). The findings from this literature review are summarized below.

Students

- Targeted recruitment of qualified students from rural and low-resource settings appears to be a particularly effective strategy for retaining students in vulnerable communities after graduation.

- Rural rotations increase students' comfort and possible willingness for rural deployment.

- An applicant's expression of interest in the profession was important for student retention (but often not part of student selection).

- Student support (financial, peer, gender) helps reduce attrition. Pre-deployment, objective-structured clinical examinations or refreshers help ensure adequate clinical skills.

Teachers, Tutors, Preceptors

- Preparation and retention of skillful teachers is essential. Teacher retention is often an issue due to low salary scales, so efforts to develop and retain teachers are key in maintaining a competent faculty.

- The role of the preceptor and preceptors' skills in clinical teaching are of critical importance, and using a learner-centered approach to identify student learning needs, assess student learning, and prioritize time management are particularly important.

- There is limited evidence requiring classroom teachers to be equally proficient as a clinical preceptor. There is stronger evidence from descriptive literature supporting the role of a preceptor as complementary to that of an academic educator.

- A fundamental premise of competency-based education is that students must have both adequate time and sufficient clinical practice opportunities to acquire and demonstrate requisite knowledge and skills.

- Academic and facility administrators must work closely together to plan and manage clinical practice and support clinical instruction, a vital requirement for competency upon graduation.

Infrastructure and Management

- Modern, Internet-enabled medical libraries, skills and simulation laboratories, and computer laboratories to support computer-aided instruction are elements of infrastructure meriting strong consideration.

- Skill labs are particularly important when access to clients is limited.

- Internet-based learning has been extensively studied, and several meta-analyses indicate that it can be as effective as traditional classroom-based learning in terms of student satisfaction and knowledge acquisition. Internet-based learning should be accompanied by sufficient skills practice and simulation for

skill development. Implementation of Internet-based or offline e-learning requires significant infrastructure, staffing and implementation support, budgeting, and planning.

Curriculum

- The health workforce must be well prepared to address national health priorities. MCSP has used task analysis to identify the appropriate skill mix based on national health priorities (for, e.g., Ghana and Liberia).

- Evidence supports a competency-based curriculum, but there is no clear evidence supporting specific curricular models such as problem-based or team-based learning.

- Formative and summative assessment of student learning, in particular for high criticality skills, is essential for competency development. The use of objective, structured clinical examinations is of particular value.

- Increased use of practice in simulation or skill labs better prepares students to work with clients and reduces risk of client harm.

Clinical Practice Sites

- All students must receive sufficient clinical practice opportunities in high-quality clinical learning environments in order to graduate with the competencies required for effective practice. Clinical sites may be strengthened through facility-based mentoring or training, use of facility-level accreditation, quality improvement efforts, or provision of infrastructure support.

- A wide variety of settings is useful to provide students the individual learning opportunities they require, given the lower frequency of occurrence of certain clinical conditions and because of a high volume of students of various health occupations and professions who may be seeking similar experiences in a simultaneous timeframe (particularly in large teaching hospitals).

- Active engagement of students, preceptors, and teachers in student practice and formative and summative assessments is important for supporting students' competency development.

- Expanding access and exposure to a variety of clinical practice sites and strengthening clinical practice sites are critical investments for competency development.

Educational Regulation and Other Influencing Factors

- Regulation is widely viewed as essential to public protection; however, it is difficult to find literature specifically on the evidence behind regulation. Globally, governments and the public recognize how important regulation is for ensuring educational quality and continued competence for the health workforce. This is reinforced in the Global Strategy on Human Resources for Health: Workforce 2030 (WHO, 2015), which highlights the importance of educational regulation and licensure in ensuring quality health services.

- Few studies make a link between pre-service education and impact on health outcomes and the health system. Nevertheless, it is logical that the production of a trained and competent staff through high-quality pre-service education and continuing professional development activities is the foundation required to achieve the desired health outcomes. Professional regulation, deployment practices, workplace environment upon graduation, and other service delivery contextual factors were analyzed as influencing factors that affect educational outcomes and health impact.

Summary: Priority Interventions

Strengthening pre-service education systems in MCSP programs is dependent on the gaps identified and national priorities. Figure 2 summarizes priority interventions, based on the evidence, for each component of the conceptual model.

Figure 2: Summary of Suggested Interventions

Clinical Practice	Students	Faculty/ Preceptors	Infrastructure/ Management	Curriculum
• Expanded number and variety of clinical sites • More clinical rotations to increase access to clients • Strengthened clinical site services and infrastructure	• Strengthened selection and recruitment • Student support measures • Pre-deployment preparation	• Faculty development • Site-based refresher clinical training • Preceptor preparation and training • Strengthened use of information and communication technology in teaching	• Skill lab support • Computer lab, learning resources access • Leadership and management development	• Rapid task analysis • Competency-based curriculum update • Rational integration of use of information and communication technology • Leverage open-source digital content
Education Regulation:				
• National education standards • National competencies • Sustainable accreditation mechanisms • Competency-based licensure and re-licensure mechanisms				

In summary, from the literature, very few studies make the link between pre-service education and health and health systems outcome improvements—that is, reduction in adverse events of care (e.g., reduction in costs for neonatal intensive care services) on improvements in the quality of life of clients served or on health impact, such as reductions in indicators of morbidity and mortality. Nevertheless, the logical argument is that adequately trained and competent staff—produced through high-quality pre-service education and sustained through continuing professional development activities—is the key to achieving these desired outcomes.

References

Jhpiego. 2011. MCHIP Pre-Service Program Roadmap, https://www.k4health.org/sites/default/files/MCHIP%20Preservice%20Roadmap%20Aug%2011%202011%20v1.2.pdf?

Jhpiego. 2012. The Health Impacts of Pre-Service Education, http://reprolineplus.org/resources/health-impacts-pre-service-education-integrative-review-and-evidence-based-conceptual.

Jhpiego. 2013, March. Pre-Service Education Toolkit. http://www.k4health.org/toolkits/pse.

Johnson P, Fogarty L, Fullerton J, Bluestone J, Drake M. 2013. An integrative review and evidence-based conceptual model of the essential components of pre-service education. *Human Resources for Health*. 11:42. http://human-resources-health.biomedcentral.com/articles/10.1186/1478-4491-11-42.

USAID. 2015, September. *USAID's Vision for Health Systems Strengthening*, 2015–2019. https://www.usaid.gov/sites/default/files/documents/1864/HSS-Vision.pdf.

World Health Organization. 2015. Global Strategy on Human Resources for Health: Workforce 2030. http://who.int/hrh/resources/globstrathrh-2030/en/.

World Health Organization. 2016. Working for Health and Growth: Investing in the Health Workforce. Report of the High-Level Commission on Health Employment and Economic Growth.