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In-service training of physician assistants in acute care in Ghana: Challenges, successes, and lessons learned



Formation interne des médecins assistants en soins intensifs au Ghana: défis, succès et leçons tirées

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Introduction: To meet the greater demand for skilled personnel in Emergency Medicine (EM) in Ghana, the authors developed an in-service course in basic acute care for Physician Assistants (PAs) working in district hospitals.

Methods: An initial training of trainers course was held for twenty-two PAs. From this initial group, ten were selected as Senior Trainers. Following a refresher course, Senior Trainers facilitated an in-service training and refresher course for other PAs from their regions. The course was organised into modules consisting of didactic lectures and interactive small group sessions. Assessment included testing, observation, case review, and simulations.

Results: All groups showed improvement in knowledge. The majority learned information sequentially, inconsistently used physical examinations for diagnosis, and rarely reassessed following interventions. Practical skills were more easily acquired than clinical decision-making skills. The case discussions and simulations were the most helpful learning tools. Symptom-based algorithms were useful for daily practice.

Conclusion: The greatest successes of this programme were providing the participants with greater confidence in basic life-saving skills and increasing their knowledge of and advocacy for EM. For continued success of this programme, a formal course with greater emphasis on filling Senior Trainer knowledge gaps, increased coordination with administrative authorities, and specific measurable clinical outcomes are needed.

Introduction: Pour répondre à la demande accrue de personnel qualifié en médecine d'urgence (MU) au Ghana, les auteurs ont élaboré une formation interne sur les soins intensifs de base destinée aux médecins assistants (MA) travaillant dans les hôpitaux de district.

Méthodes: Une formation initiale des formateurs a été dispensée à vingt-deux MA. Dans ce groupe initial, dix ont été choisis comme formateurs principaux. Après un cours de remise à niveau, les formateurs principaux ont animé une formation en interne et un cours de remise à niveau pour les autres MA de leurs régions. Le cours était organisé en modules comprenant des conférences didactiques et des sessions interactives en petits groupes. L'évaluation comprenait des examens, une observation, une étude de cas et des simulations.

Résultats: Tous les groupes ont démontré une amélioration des connaissances. La majorité a appris les informations de façon séquentielle, a utilisé de façon irrégulière les examens physiques pour les diagnostics, et a rarement réalisé une réévaluation des interventions subséquentes. Les compétences pratiques ont été acquises plus facilement que les compétences de prise de décisions cliniques. Les outils d'apprentissage les plus utiles étaient les discussions et simulations de cas. Les algorithmes basés sur les symptômes étaient utiles pour la pratique quotidienne.

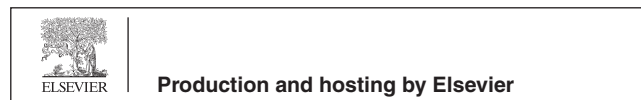
Conclusion: Les plus grands succès de ce programme ont été de fournir aux participants une meilleure maîtrise des compétences de base vitales et de développer leurs connaissances et leur plaidoyer en faveur de la MU. Pour la poursuite du succès de ce programme, un cours formel avec un accent plus prononcé sur le traitement des lacunes en termes de connaissances des formateurs principaux, une coordination accrue avec les autorités administratives, et des résultats cliniques mesurables spécifiques sont nécessaires.

African relevance

- Trauma and non-communicable diseases are amongst the top ten causes of mortality and morbidity in low to middle income countries.
- Physician and healthcare shortages exist throughout the African continent, particularly amongst workers trained in acute care.

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- Task-shifting can provide an interim solution to this human resource gap.

Introduction

Non-communicable diseases are amongst the top ten causes of mortality in low- and middle-income countries (LMICs).¹ Many of these illnesses require rapid interventions to reduce morbidity and mortality.^{2,3} Emergency Medicine (EM) could potentially play a critical role in improving the outcomes of acute presentations to health facilities.^{4,5} However, in many LMICs, this potential is hindered by a shortage of physicians in general, and specialised acute care health workers specifically.

In the absence of such specialised staff, task-shifting can provide an interim solution to this human resource gap. Task-shifting has been applied in other sectors of health delivery systems in LMICs. Faced with the HIV epidemic, community health workers, clinical officers, and nursing assistants have taken on tasks previously considered beyond the scope of their responsibilities and training.⁶⁻⁹ A trial in South Africa found that there was no difference in measured outcomes when anti-retroviral therapy was monitored by a nurse versus a doctor.¹⁰ Non-physician clinicians perform minor surgical procedures in almost half of all Sub-Saharan African countries. In Mozambique, they perform 92% of emergency obstetric surgeries.¹¹ A study from Tanzania found no difference in maternal or perinatal mortality when care was provided by an assistant medical officer compared to a medical officer.¹² The application of task shifting in acute care in LMICs is relatively new, and to date there are few studies on this topic in EM.¹³

Due to epidemiologic transitions and gaps in human resources, Ghana is an ideal setting for work in this area. Like many other LMICs, Ghana is dealing with the double burden of chronic and infectious diseases due to rapid urbanisation and other societal changes.¹⁴ Ghana is also facing particularly severe health worker shortages, with only 56% of its clinical workforce needs being met in 2010.¹⁵ The existing healthcare workforce distribution is unbalanced, with two teaching hospitals employing more than 45% of the country's doctors while less than 15% are in district hospitals. Greater Accra has eight times more physicians per capita than the most rural region of the country.¹⁶ The Ministry of Health (MoH) has tried different strategies to incentivise clinicians to work in underserved areas, including 20–30% salary top-ups and a staff vehicle purchase scheme, with only minimal success. Out of 43 doctors posted to the rural Upper East Region from 2001 to 2009, only four assumed their posts.¹⁷

Task shifting started in Ghana in 1969, with the creation of the Rural Health Service, staffed by Physician Assistants (PAs, then known as Medical Assistants). 98% of PAs are based in rural areas, and 93% of district and sub-district facilities employ PAs, making them a vital healthcare resource in these settings.¹⁵ Given the need for acute care in Ghana, the paucity of doctors in rural areas, and the growing number of PAs, at the direction of the Ghana Health Service (GHS) we undertook a pilot project to provide in-service acute care training to PAs. The remainder of this paper describes the details of the training and discusses the successes, limitations, and lessons learned from the pilot.

Methods

The primary course objective was to teach experienced PAs to identify and stabilise patients presenting with common acute conditions. The secondary course objective was to prepare a cadre of Senior Trainers to teach this information to their colleagues throughout Ghana.

The course was organised into modules consisting of PowerPoint lectures, problem-based learning case discussions, skill stations, and simulations. Objectives for each module were developed so as to establish, reinforce, and build upon the ABCs of EM. Quick-reference algorithms for evaluating and treating common acute presentations were created. The initial Senior Trainer programme spanned nine full days. Because the PAs cited difficulty being absent from their health posts for this duration, the course was shortened to five days for all subsequent trainings.

The in-service course content was developed by United States-trained physicians working with the Systems Improvement at District Hospitals and Regional Training of Emergency Care (sidHARTE) programme, based out of the Columbia University Mailman School of Public Health. Through partnerships with local institutions, sidHARTE's mission is to generate tools and implement best practices to improve care for critically ill patients in the rural hospital setting. GHS and sidHARTE have been partnering on acute care initiatives in Ghana since 2009. Three of the four course developers were trained in EM and one was trained in Internal Medicine and Paediatrics. Each had clinical and educational experience in LMICs, including Ghana.

The implementation of the in-service course began with Phase I, the Senior Trainers programme. The initial nine-day in-service Senior Trainer course was taught to 22 PAs from four different regions of Ghana, from October 31 to November 8, 2011. PAs were selected by GHS, though sidHARTE recommended PAs from district-level facilities and have either EM training or significant acute care experience as well as teaching or leadership ability.

Based on subjective and objective evaluations of their performances during the initial training of trainer course, 10 PAs were selected as Senior Trainers. This group attended a five-day refresher course six months later in order to reinforce their knowledge, and to prepare them to act as regional course facilitators.

Phase II of implementation of the in-service course was comprised of a Regional Training Program in the Brong-Ahafo/Ashanti and Northern Regions. Working in groups of two or three trainers, the Senior Trainers facilitated five-day in-service trainings and refresher courses for other PAs from their regions. All courses were supervised by at least two sidHARTE physicians. Although shorter, these courses followed the same ABC structure and mix of interactive small group case discussion, skill stations, and case simulations as the initial trainer course. Phase I and II are depicted in Fig. 1.

The ABCCC method from the Integrated Management of Adolescent and Adult Illnesses and the Integrated Management of Childhood Illnesses provided the framework for the in-service curriculum.^{18,19} Drug dosages and terminology were modified to align with Ghana Standard Treatment Guidelines. Specific diseases were chosen for emphasis based on an informal needs assessment involving patient chart

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