# INVESTIGATING THE EFFECTIVENESS AND EFFICIENCY OF MALNUTRITION ELEARNING COURSE FOR GLOBAL CAPACITY BUILDING

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## The Challenge

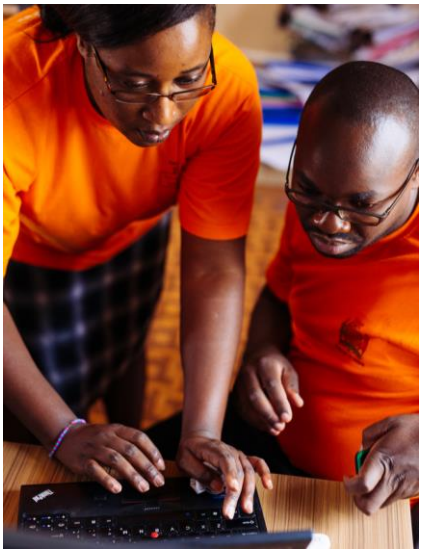
Undernutrition accounts for about 3.1 million child deaths each year. Current research emphasises that scaling up the management of severe acute malnutrition (SAM) has the highest potential of reducing child mortality.[1] However, lack of operational capacity at all levels of the health sector constrains scale-up. As well, countries most affected by SAM have outdated or non-existent nutrition training and curriculum. With the rapid spread of the internet across developing countries, there is an opportunity to use eLearning as a platform for training and capacity building for improved nutrition management.

## The Intervention

The University of Southampton developed an interactive eLearning course to build the capacity of the health sector workforce to manage SAM globally. The course used a range of rich media, but can run on low specification computers with limited internet speed. The intervention aimed to provide core knowledge and competencies to accurately diagnose and treat SAM. The primary audience was in-service and pre-service health professionals working with undernourished children, and the secondary audience was educators and trainers in academic institutions and organisations who train health personnel. The course was implemented in targeted countries—Ghana, Guatemala, El Salvador and Colombia—over two years to determine its effectiveness.

## The Evaluation

This mixed-method study was conducted in two phases by project teams in the United Kingdom, Ghana and Central America. The first phase was a retrospective cross-sectional study conducted with existing users of the eLearning course to investigate



*PATH/Gabe Bienczycki*

if they gained core competencies in SAM, whether they applied this knowledge and what the impact on their professional performance was. The second phase was a longitudinal empirical study with the aim of investigating the effectiveness of the course in knowledge gain, behavioural change and resulting clinical outcomes in the targeted countries. The research team conducted assessments, questionnaires and interviews with participants before and after the training with one year follow up. Medical records review, observation and hospital personnel interviews were also conducted at participating hospitals.

## The Results

In total, 1,260 individuals participated in the study—73% in Ghana and 11% in Central America—as well as 38 healthcare and academic institutions across 40 countries. Overall, the results suggested that the course was effective in training individuals on the management of SAM. For those who participated in the course, knowledge gains were significant, with a 38.8% increase in performance immediately after the training and a 15.6% increase in knowledge retention after 6 months. Also at the 6-month follow-up, 52% of participants had been applying the acquired knowledge and competencies, leading to improved and early diagnosis, correct assessments, educating others (parents), treatments following the World Health Organization 10 steps, and improved management between community centres and hospitals. As a result, case fatality by SAM was decreased significantly, from 5.8% before the training to 1.9% after the training.

## The Lessons Learnt

Effective course design, relevance and ownership were key contributing factors to improve health outcomes through capacity building. Seeing the relevance of the topic and owning what they learnt led the participants to actively initiate changes. Some areas in the study populations were still without quality internet. This made it difficult for the participants to take the course or take part in the study from home. Using the CD-ROM and hardcopy materials mitigated this challenge. In Central America, university students are expected to have the capacity to study in English; however, many participants struggled to conceptualise terms in English and this resulted in frustration while taking the course. This challenge emphasised the need to translate the course into Spanish.

## Looking Ahead

With results showing improved knowledge and skills of health professionals and increased clinical outcomes, Malnutrition eLearning will be promoted as a capacity-building tool. To expand its use, it is vital to translate it into other languages and to advocate for its inclusion into national and academic nutrition education.

The Nutrition Embedding Evaluation Programme (NEEP) is a four-year project (Oct 2013–Oct 2017) led by PATH and funded by the UK Department for International Development. NEEP aims to build the evidence base for what works in improving nutrition by conducting credible, robust evaluations of innovative interventions implemented by civil society organisations (CSOs). The programme provides grants to 18 CSOs to evaluate their programmes in 13 different countries. For more information, see **http://sites.path.org/mchn/our-projects/nutrition/neep/**

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## References

[1] Black RE, Allen LHb, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, Mathers C, Rivera J for the Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet.* 2008;371(9608):243-260.

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