

# Development of a Framework of Adaptable Guidelines for Incorporating Medical Nutrition Education into Medical School Curriculum



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**Objectives:** In Malawi, 37% of children under 5 are stunted; 3% wasted; 12% underweight while 22% adults are overweight/obese and 29% with central adiposity, highlighting the double burden of disease in Malawi. Tackling non-communicable diseases along with addressing the double burden can be achieved if medical doctors provide nutrition and dietary advice to their patients. The objective was to address the double burden by developing a framework of adaptable guidelines in medical nutrition for use in the analysis of undergraduate medical curriculum in Malawi. We also aimed to structure the framework for use as a foundation for medical curricula worldwide.

**Methods:** A review of available literature was conducted to determine what nutrition content was deemed important in medical schools worldwide. Common themes were found across medical school curricula in the United States, Canada, United Kingdom, Australia, New Zealand, and Bahrain. The information was organized into four overarching categories. These nutrition content areas were further sub-classified to offer more detailed guidance. Malawian expert consensus was sought on the findings to better meet the unique needs in Malawi.

**Conclusions:** Key elements of medical education should give focus to basic nutrition principles and practice skills, and nutrition as it relates to organ systems and changes along the lifecycle. Guidelines recommend providing medical students with a minimum of 25 hours of nutrition content over the course of their medical education, though many institutions fall well short of this figure. The scarcity of published data guiding universities on the specific components of nutrition science and education needed to produce competent physicians poses a needless barrier to reaching this goal. This framework succinctly delineates important aspects of nutrition, which will be used to examine and augment Malawi's medical school curricula. Additionally, it can be customized to meet the needs of any country.

### Key Elements of Nutrition Education in Global Medical Curricula

Basic Nutrition Principles and Practice Skills	Nutrition Across the Lifespan	Nutrition and Organ Systems	Other
<ul style="list-style-type: none"> <li>Nutrition Fundamentals</li> <li>Nutrition Assessment</li> <li>Public Health</li> <li>Nutrition Counseling</li> <li>Nutrition Research</li> </ul>	<ul style="list-style-type: none"> <li>Women's Health</li> <li>Perinatal Nutrition</li> <li>Infant and Pediatric Nutrition</li> <li>Adolescent Nutrition</li> <li>Geriatric Nutrition</li> </ul>	<ul style="list-style-type: none"> <li>Cardiovascular</li> <li>Gastrointestinal</li> <li>Endocrine/ Metabolic</li> <li>Hematologic/ Oncologic</li> <li>Renal</li> <li>Immune</li> <li>Respiratory</li> <li>Nervous System</li> <li>Integumentary</li> </ul>	<ul style="list-style-type: none"> <li>Nutrition Support</li> <li>Drug-Nutrient Interactions</li> <li>Ethics</li> </ul>

### Example of a Customized Guideline

Public Health
<p><b>Nutritional Prevention and Treatment of Communicable and Non-Communicable Diseases</b></p> <ol style="list-style-type: none"> <li>Recognize social, environmental, and cultural influences on food choice and dietary patterns</li> <li>Recognize societal and policy influence on dietary behaviors, health promotion, and disease prevention, including, but not limited to:               <ol style="list-style-type: none"> <li>Food security</li> <li>Salt iodination</li> <li>Oral rehydration therapy</li> <li>Vitamin A prophylaxis and treatment</li> <li>Zinc prophylaxis and treatment</li> <li>Vitamin K supplementation of neonates</li> </ol> </li> <li>Recognize the double burden of communicable and non-communicable disease</li> <li>Describe the role of nutrition and food safety on public health and the prevention of infectious disease               <ol style="list-style-type: none"> <li>Hand washing</li> <li>Safe food handling</li> <li>Microbial contamination and growth</li> <li>Water safety</li> </ol> </li> </ol>