

Tufts University, Friedman School of Nutrition Science and Policy

NUTR 308 -- NUTRITION IN EMERGENCIES
POLICIES, PRACTICE AND DECISION-MAKING

Spring 2019

Class Meetings: Tuesdays 1:30-4:30pm
Jaharis 155
150 Harrison Ave. Boston

Instructor(s): Erin Boyd
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Office hours: By appointment (phone or skype)

Graduate Credits: 1 credit

Prerequisites: None

Course Description:

The course will introduce students to the emergency nutrition response in complex emergencies. The implications of an emergency nutrition approach for assessment and analysis, policy development, program design and implementation will be examined. This will provide an understanding of the causes and nutritional outcomes of humanitarian crises and complex emergencies (malnutrition, morbidity and mortality). The course has a field-oriented focus based on a wide range of recent and past food and nutrition crises ranging from Darfur to the Syrian crisis. The course reviews international response strategies, nutrition programmes and relevant policies; and incorporates relevant applied research. The course provides the opportunity for active class participation drawing upon the actual work experience of the students and applying a range of up-to-date case-study materials based on current humanitarian crises.

Texts and Materials: Readings from various journals and books will be posted on Trunk and updated weekly. Essential readings are listed for each lecture. All students are expected to do at least the essential reading, these are key for our discussions in class – please take note of page numbers or chapters in **bold**, as these indicate the specific sections you should read. The further reading list provides opportunity to explore specific issues in more depth; it is up to you what you take from this list. All readings are available electronically on the Trunk course website or can be downloaded via the links given.

General readings and tools applicable to most classes:

- Global Nutrition Cluster website- <http://nutritioncluster.net>
- WHO. 2013. Updates on the management of severe acute malnutrition in infants and children http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf
- The Sphere Project. Minimum Standards in Food Security & Nutrition. Humanitarian Charter and Minimum Standards in Disaster Response. Geneva: The SPHERE Project, 2018. <https://spherestandards.org/wp-content/uploads/Sphere-Handbook-2018-EN.pdf>
- Latest issue of: Field Exchange, The Emergency Nutrition Network (ENN) Magazine:

<http://www.ennonline.net/fex/>

Academic Conduct: Each student is responsible for upholding the highest standards of academic integrity, as specified in the Friedman School's Policies and Procedures manual (<http://nutrition.tufts.edu/student/documents>) and Tufts University policies ([http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic Integrity.pdf](http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic%20Integrity.pdf)). It is the responsibility of each student to understand and comply with these standards, as violations will be sanctioned by penalties ranging from failure on an assignment and the course to dismissal from the school.

Classroom Conduct: Participation in class is expected and contributes to the course grade. No electronic devices are to be used during the lectures, and students are expected to actively engage in small group work during the lectures. Each week, students are asked to complete reading review questions on Trunk to facilitate class discussion.

Assessment and Grading:

Grading will be based on a combination of:

- | | |
|----------------------------------------------------------|-----|
| a) Class participation | 10% |
| b) Written mid-term assignment | 25% |
| c) Pair assignment with in class presentation (in pairs) | 25% |
| d) Final take-home assignment | 40% |

A passing grade in the course is B- or better. Course grades will be based on the below (subject to revision during the course):

A > 94%

A- 90-<94%

B+ 87-<90%

B 84-<87%

B- 80-<84%

The Final will be a project to be completed in groups of 2-4 people (no more than 4), with project tasks split between you. A choice of project questions will be made available for your consideration. Your final grade for this assignment will be split 60% for the written report, 10% for a 15-minute presentation to be delivered during the last class (April 24th) and 30% for your individual contribution to the project (see grading plan in final assessment question document). Your final report must be submitted to me by COB on **May 6th 2018**.

All assignments must be submitted by the due date. Every day late will be penalized by one grade step (e.g., A to A-, A- to B+) unless prior permission has been given by the instructor

Accommodation of Disabilities:

Students with documented disabilities are entitled to academic accommodation appropriate to their needs. If you require accommodations for this course, please contact me confidentially prior to the end of the second week of classes.

Course Schedule:

* This schedule is subject to modification at the instructor’s discretion.

Week #	Topic & Lecturer	Date	Assignments Due
1	Introduction to Malnutrition in Emergencies	January 22	
2	Politics and Terminology: Food crises, health crises, political crises?	January 29	
3	Meaning and measurement of malnutrition: Individual	February 5	
4	Meaning and measurement of malnutrition: population level; Early warning, nutrition surveillance systems	February 12	
5	Community Management of Acute Malnutrition	February 19	Pair presentations in class
6	Addressing Micronutrient Deficiencies in Emergencies	February 26	Pair presentations in class
7	Infant and Young Child Feeding in Emergencies	March 5	Pair presentations in class
8	Water, Sanitation and Hygiene in Emergencies: <i>Guest Lecturer: Daniele Lantagne (Tufts University)</i>	March 12	Midterm choice WASH
9	Ration planning, targeting assistance	March 26	Midterm choice rations
10	Nutrition, Public Health in emergencies <i>Guest Lecturer: Justin Pendarvis and/or Sonia Walia</i>	April 2	Midterm Choice Public Health in Emergencies
11	Visit to Edesia plant TBD	April 9	
12	Agriculture, food security, livelihoods, cash Four Famines Review	April 16	Midterm Choice Food Security
13	Presentations and Group Projects	April 23	All groups present
	FINAL PAPER DUE	May 6 th by midnight	

Course Topics, Learning Objectives and Assignments

Class 1: An Introduction to malnutrition in emergencies

An overview of the different types of malnutrition and their public health significance in emergencies. Physiological vulnerability in relation to the inter-generational cycle of malnutrition will be covered. An overview of classification of nutrients in the diet, including the concept of Type I and Type II nutrients. The roles and responsibilities of different international agencies for addressing malnutrition will be introduced.

Objectives:

1. Analyse the main types of malnutrition and understand their public health significance in general and in emergency contexts.
2. Describe how malnutrition affects individuals throughout the life cycle, and how malnutrition can impact future generations. Discuss the implications of this for who is most vulnerable in emergencies.
3. Determine the causes of malnutrition based on a conceptual framework, which differentiates between the immediate, underlying, and basic causes of malnutrition.

Essential Reading:

- i. Young, H., A. Borrel, et al. (2004). "Public nutrition in complex emergencies." *The Lancet* 365(1909): 1899.
- ii. WHO. 2000. **Chapter 2**, Major nutritional deficiency diseases in emergencies. In: *The Management of Nutrition in Major Emergencies*. Geneva: World Health Organization
- iii. Golden, M. H. N. 1995. Specific deficiencies versus growth failure: type I and type II nutrients. *SCN News* 12: 10-14.
- iv. Black et al. (2008). "Maternal and child undernutrition: global and regional exposures and health consequences." *The Lancet* 371: 243-60.

Class 2: Politics and Terminology: food crises, health crises or political crises?

The role of food and nutrition in the process, dynamics and outcomes of emergencies will be addressed. A brief overview of Sen's entitlement theory of famine and some subsequent modifications will be discussed. An introduction to the concept of Public Nutrition, focusing on the project cycle and application of the conceptual framework of the causes of malnutrition and its relevance in emergencies will also be reviewed.

Objectives:

1. Analyze the issues in defining and declaring famine
2. Understand the basis of Sen's entitlement theory and subsequent modifications, including the role and importance of coping strategies, war and civil unrest
3. Recognize the main causes of excess mortality in emergencies.
4. Assess how famine theories have influenced response strategies; food first approaches versus public health responses, versus more combined strategies.

Essential Reading:

- i. Keen, D. 2009. Famine. Pages 100-115 in *Complex Emergencies*. Polity Press, Cambridge, UK

- ii. Macrae, J., and A. Zwi. 1992. Food as an instrument of war in contemporary famines: a review of the evidence. *Disasters* 16, no. 4: 299-321
- iii. de Waal, A., 1989, Death [sub-heading: Causes of Death]. Chapter 7 in: *Famine that Kills. Darfur, Sudan, 1984 - 1985*. London: Clarendon Paperbacks; pp. 186-194
- iv. Lautze, S. and Maxwell, D. (2007) Why do famines persist in the Horn of Africa? Chapter 10 in *The New Famines. Why famines persist in an era of globalization*. Devereux, S. 2007 Oxon: Routledge pp222-245

In class discussion:

- IRIN. May 2011. Analysis: What is a famine? <http://www.irinnews.org/report.aspx?reportid=89121>
- Somalia Famine Declaration (July 2011). FEWSNET
- Famine spreads into three new areas (Sept 2011). FEWSNET
- Niger's hunger crisis: a legacy of lessons unlearned, *The Lancet*, Vol 376 August 21, 2010

Class 3: Meaning and measurement of malnutrition (Part I); Individual anthropometric status and associated risks.

An overview of measurement of individual nutritional status will be briefly discussed. The calculation of nutritional indices and reference values and the classification of malnutrition will be addressed. The operational implications of the new WHO growth standards will be reviewed, as well as the recent work on MUAC. The relationship between severity of malnutrition and risk of mortality in emergencies will be briefly reviewed.

Objectives:

1. Identify the different uses of individual nutritional status (growth monitoring, screening, program admission and discharge criteria and for population-based nutrition surveys)
2. Calculate an individual's nutritional status using the weight-for-height index, by comparing their body measurements to international reference values.
3. Understand the implications of the new WHO growth standards and their use in emergencies.
4. Comprehend the relationship between individual nutritional status and mortality risk.

Essential Reading:

- i. Young, H. and S. Jaspars (2006). *The Meaning and Measurement of Acute Malnutrition: A Primer for Decision-makers*. Humanitarian Practice Network Paper No 56. London, Humanitarian Practice Network, Overseas Development Institute. **Pages 1 to 14**
- ii. Duggan M.B. (2010) Anthropometry as a tool for measuring malnutrition: impact of the new WHO growth standards and reference. *Ann.Trop.Paediatr.* 30, 1-17
- iii. Young, H. and Jaspars, S. Review of Nutrition and Mortality Indicators for the IPC: Reference Levels and Decision-making. 2009. Rome, UN SCN; IPC Global Partners. **Pages 50-63**
- iv. Myatt M et al. (2008). Effect of body shape on weight-for-height and MUAC in Ethiopia. *Field Exchange, Emergency Nutrition Network*, 34: 11.

Manuals:

- WFP and CDC (2005). A Manual: Measuring and Interpreting Malnutrition and Mortality. Rome, Nutrition Service, Policy, Strategy & Programme Support Division World Food Programme

Class 4: Meaning and measurement of malnutrition (Part II); Anthropometric surveys including analysis, interpretation and use for decision-making; Early warning and nutrition surveillance systems.

The session will provide an introduction to sampling and survey design, statistical analysis and interpretation, with an emphasis on reviewing survey validity and reliability rather than operational planning to undertake surveys. The meaning and interpretation of survey findings for complex emergencies will be discussed. Nutritional risk and vulnerability will be addressed in relation to findings and broader factors.

Objectives:

1. Describe with the stages of planning, designing, analyzing, interpreting and reporting on a standardized nutrition survey.
2. Apply nutritional benchmarks used to interpret anthropometric data in relation to the selective feeding decision-making frameworks.
3. Apply survey results and draw conclusions about the nutritional situation that will serve as an adequate basis for decision-making and planning a strategic response.

Essential reading:

- i. Young, H. and S. Jaspars (2006). The Meaning and Measurement of Acute Malnutrition: A Primer for Decision-makers. Humanitarian Practice Network Paper No 56. London, Humanitarian Practice Network, Overseas Development Institute. **pages 15 – 46**
- ii. Bilukha OO. (2008). Old and new cluster designs in emergency field surveys: in search of a one-fits-all solution. *Emerging Themes in Epidemiology*. 5(7): 1-7
- iii. Grais, R. F., Luquero, F. J., Grellety, E., Pham, H., Coghlan, B., and Salignon, P. 2009. Learning lessons from field surveys in humanitarian contexts: a case study of field surveys conducted in North Kivu, DRC 2006-2008. *Confl.Health* 3: 8
- iv. WFP. Understanding vulnerability: VAM food security analysis. 2010. Rome, World Food Program.

Websites:

SMART (Standardized Monitoring and Assessment of Relief and Transitions) is an inter-agency initiative, which was launched in 2002 by a network of organizations and humanitarian practitioners. It is an improved survey method based on the two most vital, basic public health indicators to assess the severity of a humanitarian crisis: nutritional status of children under-five and the mortality rate of a population. Many agencies in the field will now use these methods for nutrition assessments in emergencies – there is full guidance and a manual downloadable from this site: <http://www.smartmethodology.org/>

UNICEF Nutrition survey toolkit- Nutrition surveys with SMART Methods are simple, rapid, and transparent to provide nutrition data for immediate action. The collection of best practices and innovations from experts in the field has been assembled and available freely on the internet (www.smartindicators.org, www.smartmethodology.org). These methods were developed by Nutrition Experts and field-based nutrition program staff and were first launched on the national level in Niger

2005 / 2006. These surveys are not costly, do not employ great numbers of staff, and produce high quality results that can be compared to DHS or MICS survey. <http://www.nutritionssurveytoolkit.org/>

The Food Security and Nutrition Analysis Unit- Somalia (FSNAU) seeks to provide evidence-based analysis of Somali food, nutrition and livelihood security to enable both short-term emergency responses and long- term strategic planning to promote food and livelihood security for Somali people.

The overall objective of the project is to ensure that Somali food, nutrition and livelihood security, at the household level, is strengthened thereby ensuring greater resilience to future “shocks” such as conflict, drought, flood, disease and inflation: <http://www.fsnau.org/>

Class 5: Community Management of Acute Malnutrition

An overview of the management of severe acute malnutrition, phases of treatment, management of associated medical complications and nutritional and medical protocols will be discussed. Policies and guidelines will be reviewed. The design and organisation of programmes including centralized versus community-based treatment approaches will be described. Monitoring at individual and programme will be discussed.

Objectives:

1. Compare CMAM to other models for treating acute malnutrition
2. Comprehend the differences between supplementary and therapeutic feeding and their complementarities.
3. Examine the protocols of treatment and management of severe malnutrition specifically in relation to admission criteria, systematic medical treatment of underlying complication, monitoring

Essential Reading:

- i. Collins S. Changing the way we address severe malnutrition during famine. *Lancet* 2001; 358(9280): 498-501
- ii. Guerrero S., Myatt M., & Collins S. (2010) Determinants of coverage in community-based therapeutic care programmes: towards a joint quantitative and qualitative analysis. *Disasters* 34, 571-585.
- iii. UNICEF. Programme Guidance on Management of Acute Malnutrition (2012).
- iv. Hall A, Oirere M, Thurstans S, Ndumi A, Sibson V. (2011) The practical challenges of evaluating a blanket emergency feeding programme in northern Kenya. *PLoS.ONE*. 6(10):e26854

Class 6: Addressing micronutrient deficiencies

The risks for micronutrient deficiencies in emergencies and the challenges for their assessment will be addressed. Strategies for prevention and control of micronutrient deficiency diseases will be discussed. These will include: Vitamin A supplementation, fortification of foods locally, regionally and internationally (salt, cereals, blended food, oil) and improving the quality of the general ration programme and promoting access to sources of micronutrient rich food.

Objectives:

1. Understand the increased risks for micronutrient deficiency diseases (MDDs) associated with crisis-affected populations
2. Become familiar with the different types of MDDs that are common in emergencies, specifically scurvy, pellagra and beri-beri
3. Be familiar with the broad range of responses and strategies for addressing MDDs including supplementation, fortification, food-based approaches and public health responses.

Essential Reading:

- i. Seal A, Prudhon C. 2007 Assessing micronutrient deficiencies in emergencies: current practice and future direction. 2007. Geneva, Switzerland, UN Standing Committee on Nutrition. Nutrition Information in Crisis Situations.
- ii. Cheung, E., Mutahar, R., Assefa, F., Ververs, M.-T., Nasiri, S. M., Borrel, A. and Salama, P. (2003) An epidemic of scurvy in Afghanistan: assessment and response. *Food and Nutrition Bulletin*, **24**, 247-255.
- iii. Dye TD. (2007). Contemporary Prevalence and Prevention of Micronutrient Deficiencies in Refugee Settings Worldwide. *Journal of Refugee Studies*, 20(1): 108-119.
- iv. Seal A, Kafwembe E, Kassim IAR, Hong M, Wesley A, Wood J, Abdalla F and van den Briel T. (2008). Maize meal fortification is associated with improved vitamin A and iron status in adolescents and reduced childhood anemia in food aid-dependent refugee population. *Public Health Nutrition*. 11(7): 720-728.
- v. WHO, WFP, UNICEF. Preventing and controlling micronutrient deficiencies in populations affected by an emergency: joint statement by the World Health Organization, the World Food Programme and the United Nations Children's Fund. 2007. Geneva, WHO.

Class 7: Infant and Young Child Feeding in Emergencies

The importance of breastfeeding and appropriate complementary feeding in refugee and other emergency situations will be given. Appropriate strategies for protecting, supporting and promoting breast-feeding among emergency affected populations, including policy development and co-ordination will be discussed. An overview of the key factors for consideration in providing nutritional support for people living with HIV/AIDS will also be discussed.

Objectives:

1. Analyze the relationship between infant feeding, disease, mortality and the emergency context
2. Analyze challenges for promoting and supporting breastfeeding and the increased risks of artificial feeding associated with emergencies
3. Describe practical strategies for supporting women to breastfeeding and understand how safe artificial feeding can be promoted and supported.
4. Explain current policies on infant feeding in the context of HIV/AIDS affected populations.

Essential Reading:

- i. Gribble KD, McGrath M, MacLaine A, Lhotska L. 2011. Supporting breastfeeding in emergencies: protecting women's reproductive rights and maternal and infant health. *Disasters*. 35(4):720-38.
- ii. Talley L, Boyd E. 2013. Challenges to the Programmatic Implementation of Ready to Use Infant Formula in the Post-Earthquake Response, Haiti, 2010: A Program Review, PLOS One.
- iii. IFE Core Group. (2007). Infant and young child feeding in emergencies. Operational guidance for emergency relief staff and programme managers. Version 2.1, Infant Feeding in Emergencies Core Group.
- iv. Assefa F, Sukotjo S, Winoto A and Hipgrave D. (2008). Increased diarrhea following infant formula distribution in 2006 earthquake response in Indonesia: evidence and actions. *Field Exchange, Emergency Nutrition Network*, 34: 30-35.
- v. WHO. HIV and infant feeding: Principles and recommendations for infant feeding in the context of HIV and a summary of evidence. 2010. Geneva, World Health Organization. **Pages 1-9 only**

Policies

- vi. WHO (2004). Guiding principles for feeding infants and young children during emergencies. 2004, World Health Organization. (pages 8 – 10)
- vii. UNHCR (2006). UNHCR Policy Related to the Acceptance, Distribution and use of Milk Products in Refugee Settings. Geneva, UN Refugee Agency.

Websites

<http://www.enonline.net/ife>

The Infant & Young Child Feeding in Emergencies Core Group ([IFE Core Group](#)) is an inter-agency collaboration of UN agencies and non-governmental organizations concerned with policy guidance development and implementation and capacity building on IFE since 1999. Since 2004, ENN has been the coordinating agency for the IFE Core Group and provides an institutional 'home' to locate the initiative. ENN is a member of the UNICEF-led Interagency Standing Committee (IASC) Nutrition Cluster, to represent IFE on behalf of the IFE Core Group. Over the years, the IFE Core Group has worked with many agencies, individual experts and directly with field teams and welcomes collaboration.

Key (*recent*) resources:

[UNICEF, WHO, WFP Joint Statement. Call for support for appropriate infant and young child feeding in Haiti. Jan 2009.](#)

[UNICEF, WHO technical note on HIV & infant feeding in Haiti. Jan 2009.](#)

Class 8: Water, Sanitation and Hygiene linkages with undernutrition in emergencies

Readings TBD

Class 9: Planning rations and targeting assistance

The focus will be on planning adequate rations to meet different dietary needs. We will review policies and procedures for planning general rations, including an overview of key food groups in the diet and related food commodities in the food basket. We will also review the general approaches to food distribution and targeting, including practical constraints and challenges and how they are addressed.

Objectives:

1. Compare different types of modalities for food distribution related to nutritional objectives.
2. Assess and their relative roles and responsibilities of UN agencies, donors, and NGOs in relation to food aid
3. Analyze the nutritional requirements of an adequate ration, the different options for commodities, and be able to review the nutritional adequacy of a general ration for a given population.
4. Synthesize alternatives to general food distribution
5. Debate the continuation of food aid as a means of humanitarian support
6. Analyze the purpose of targeting (efficiency, effectiveness)
7. Explain how targeting and distribution influence protection.
8. Compare modalities for targeting and management of food distribution

Essential Reading:

- i. Harvey, P., Proudlock, K., Clay, E., Riley, B., and Jaspars, S. Food aid and food assistance in emergency and transitional contexts: a review of current thinking. 2010. London, Humanitarian Policy Group, Overseas Development Institute. **Pages 35-51**
- ii. Chaparro C.M. & Dewey K.G. (2010) Use of lipid-based nutrient supplements (LNS) to improve the nutrient adequacy of general food distribution rations for vulnerable sub-groups in emergency settings. *Matern.Child Nutr.* **6 Suppl 1, This is a long article – read pages 57-60 ‘Discussion’ only if you are short of time**
- iii. Bush, J. 1995. The role of food aid in drought and recovery: Oxfam's North Turkana (Kenya) Drought Relief Programme, 1992 - 94. *Disasters Journal* 19, no. 3: 247-59.
- iv. WFP. (2008). Vouchers and cash transfers as food assistance instruments: opportunities and challenges. The World Food Programme, Rome, 25 September 2008. **Pages 1-10**
- v. Zerbe, N. (2004). "Feeding the famine? American food aid and the GMO debate in Southern Africa." *Food Policy* 29: 593-608
- vi. Maxwell, D., Young, H., Jaspars, S., Frize, J., Burns, J. Targeting and distribution in complex emergencies: Participatory management of humanitarian food assistance (2011) *Food Policy*, Volume 36, Issue 4, Pages 535-543
- vii. Young, H., A. Taylor, et al. (2004). "Linking Rights and Standards: The Process of Developing 'Rights-based' Minimum Standards on Food Security, Nutrition and Food Aid." *Disasters* **28(2)**: 142-159.
- viii. Clay DC, Molla D, Habtewold D. 1999. Food aid targeting in Ethiopia. A study of who needs it and who gets it. *Food Policy* 24: 391-409.
- ix. Young, H. (2007). Looking beyond food aid to livelihoods, protection and partnerships: strategies for WFP in the Darfur states. *Disasters*. 31(S1):S40–S56.

Class 10: Nutrition outcomes through Agriculture, food security, livelihoods, cash programming

Objectives:

- Argue the role of food security and agriculture interventions in promoting nutrition
- Assess the effects of combined agriculture and nutrition education on child growth
- Compare current activities involving food security, nutrition and agriculture interventions

Essential Readings:

- ACF (2011), Maximising the Nutritional Impact of Food Security and Livelihoods Interventions: A Manual for Field Workers, pgs. 46-61.
- AVDRC (November 2012), The World Vegetable Center, Promoting Best Post Harvest Practices: Skim success stories
- Dunn, E (2013), FIELD Report No. 18: Smallholders and Inclusive Growth in Agricultural Value Chains
- IFPRI (2014), Guiding Principles for Improving Nutrition Through Agriculture

Class 11: Nutrition and Public Health in Emergencies

Guest lecturers: Sonia Walia and Justin Pendarvis from USAID/OFDA

Public health emergencies including outbreaks and sanitation crises require nutrition components. Prevention, treatment and control of communicable diseases including measles, water and sanitation, diarrhea, reproductive health will be discussed, particularly in relation to their impact on preventing and controlling deterioration in nutritional status.

Objectives:

1. Analyze the role of nutrition as part of a public health response in emergencies.
2. Examine nutrition response in the context of the Ebola response
3. Examine nutrition response in recent cholera outbreaks

Essential Reading:

ENN (2014), Infant Feeding in the Context of Ebola, http://files.enonline.net/attachments/2176/DC-Infant-feeding-and-Ebola-further-clarification-of-guidance_190914.pdf

WHO, UNICEF, WFP (2014) Interim Guideline: Nutritional Care of Children and Adults with Ebola Virus Disease in treatment centers, http://files.enonline.net/attachments/2176/DC-Infant-feeding-and-Ebola-further-clarification-of-guidance_190914.pdf

Class 12: Four Famines Response Review

Class 13: Presentation of final group projects