



**A Recipe for Nutrition
Competent Physicians at the
Northern Ontario School of
Medicine (NOSM)
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Disclosure

<input type="checkbox"/>	No, I have nothing to disclose
<input checked="" type="checkbox"/>	Yes, I have the following to disclose:

<i>Company Name</i>	<i>Honoraria/ Expenses</i>	<i>Consulting/ Advisory Board</i>	<i>Funded Research</i>	<i>Royalties/ Patent</i>	<i>Stock Options</i>	<i>Ownership/ Equity Position</i>	<i>Employee</i>	<i>Other (please specify)</i>
Northern Ontario School of Medicine							X	

Indicate funding sources if any:	
NOSM UME Nutrition in Medicine Student Interest Group (food costs)	Sudbury Community Foundation Grant (food costs)
Canadian Tire (Sudbury, ON) (equipment)	Public Health Sudbury & Districts (equipment)





NOSM=Northern Ontario School of
Medicine

NODIP=Northern Ontario Dietetic
Internship Program

UME=Undergraduate Medical Education

CML=Culinary Medicine Lab



Lifestyle interventions remain the
cornerstone of chronic disease prevention¹⁻⁴



Dissatisfied⁵⁻⁸ & Disconnected

We “can proficiently describe the physiology of hypertension and prescribe the recommended anti-hypertensives, yet we are incompetent and uncomfortable giving lifestyle and nutrition recommendations that are pertinent to our patients’ condition”

-[NOSM medical trainee](#)



Survey of Northern Ontario Clinicians

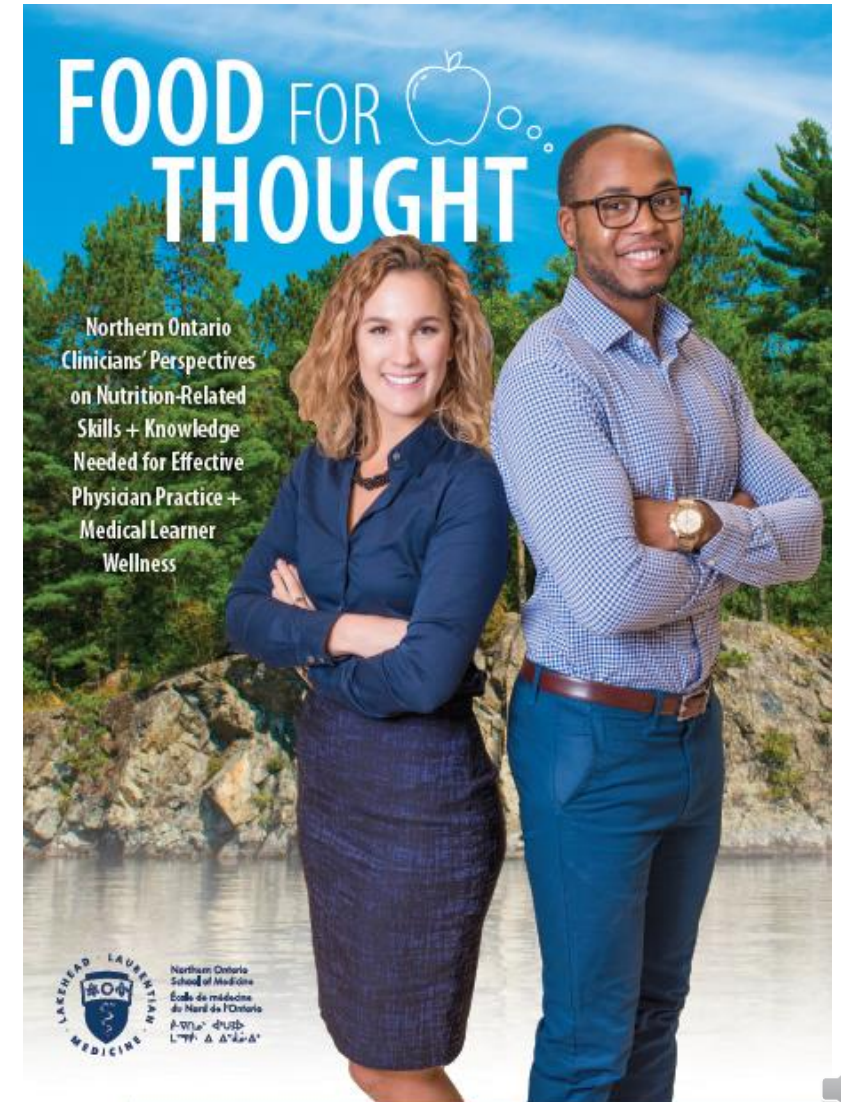
Sampling frame

- 220 RDs and 12,000 MDs

NOSM distribution lists and social media

Respondents

- 107 RDs
- 16 MDs (3 NOSM grads, 9 non-NOSM grads, 4 NOSM graduate residents)
- 46% urban, 38% rural, 16% both
- Majority in general practice, some in specialized practice, home care, public health



General practice issues

- General knowledge, evidence-based recommendations
- When and how to refer to RD/RD role
- Counselling skills

Nutrition throughout the lifespan

- General knowledge, evidence-based recommendations
- Nutrition screening and assessment skills and tools
- Identifying/preventing/treating malnutrition

Therapeutic nutrition-disease management

- Weight and diabetes management
- Fad diets
- Identifying/preventing/treating malnutrition

Population and public health

- Food insecurity/poverty and nutrition
- SDOH
- Food literacy

*There are many diseases that benefit from nutritional interventions. **As doctors, we do not fully appreciate the important role of nutrition.** I think **we pay lip service to diet and nutrition because we have never been educated** regarding the effects of nutrition in various disease processes. I think that a brief overview of the far-reaching effects of nutrition (with the associated evidence) would be key to developing insight and appreciation. You basically just need to **educate medical learners so that they understand that dietary management is more than just a minor, optional part of disease management.***

(Northern Ontario MD)



What should nutrition education look like for physicians?

Comprehensive

- Biochemical
- Physiological
- Clinical

Translatable

- Biopsychosocial model
- Food insecurity
- Social determinants of health

Interdisciplinary

- Registered Dietitians
- Community partners



“The greatest predictor of patient nutrition counselling by physicians is the physician’s own perceptions of nutrition and eating habits ”

Spencer et al., Am J Clin Nutr 2006



Definitions

Lifestyle Medicine

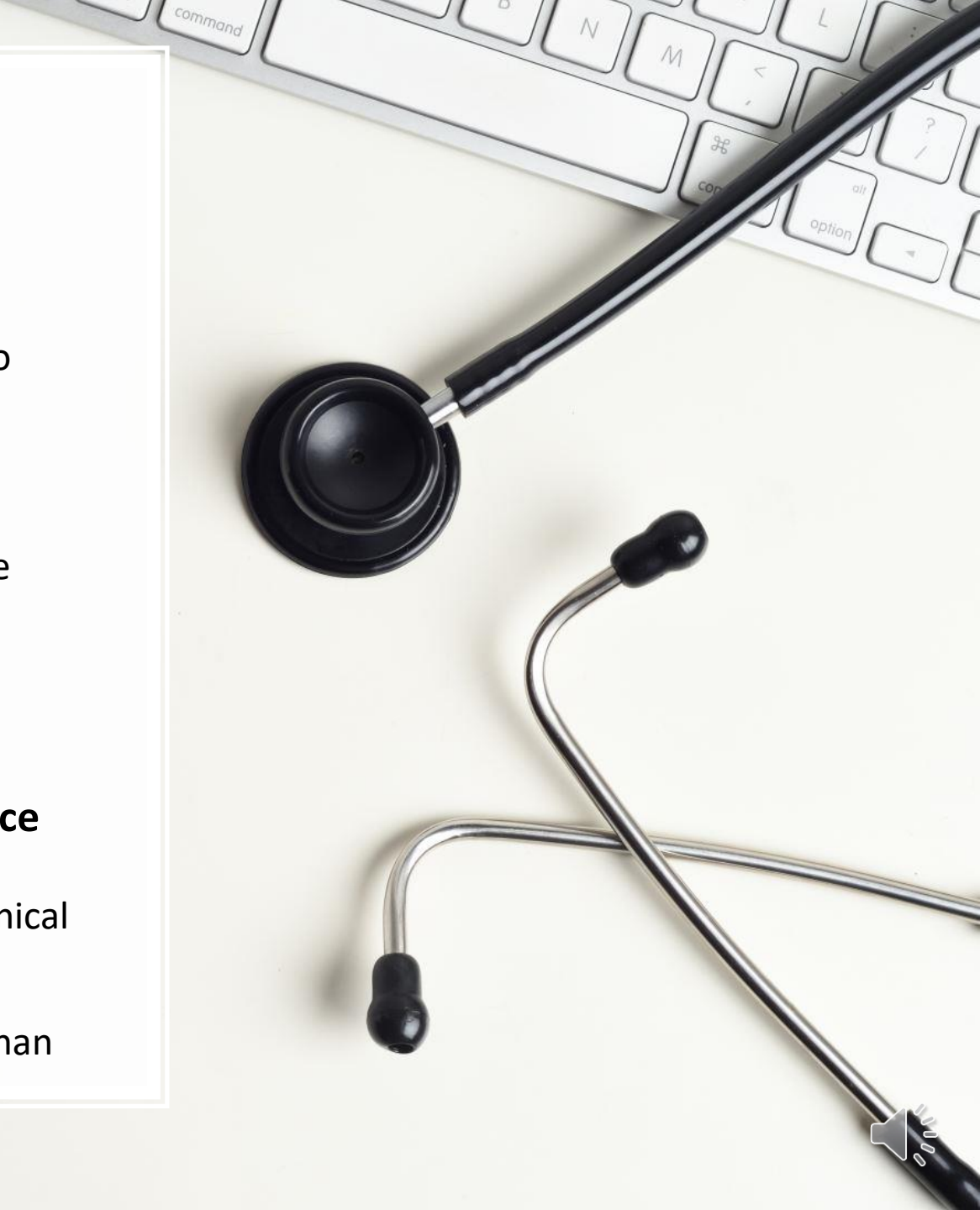
- integration of healthful lifestyle behaviors into medical practice to lower the risk for chronic disease and offer additional therapies to manage existing disease⁹

Culinary Medicine

- an evolving evidence-based field blending the art of food with the science of medicine to achieve desired health outcomes¹⁰
- integrates “food pleasure” with scientific knowledge of food and dietary choices with human metabolism, immunity, and pathophysiology¹¹

Simulation Based Medical Education with Deliberate Practice (SBME-DP)¹²

- engages learners in lifelike experiences designed to mimic real clinical encounters with a goal of constant skill improvement, not just skill maintenance
- much more powerful predictor of professional accomplishment than experience or academic aptitude



Culinary Medicine=SMBE-DP^{13,14}

- Model is not unique; widely implemented in 50+ US medical schools^{10,14-20}
- Superior for skill acquisition in mastery learning^{13, 14}
- Interprofessional learning model
- Greater understanding of the health care team including RD^{9, 21-23}
- Improves personal health behaviours and perspectives^{14,16,18-20}



Improve students' confidence in nutrition counseling

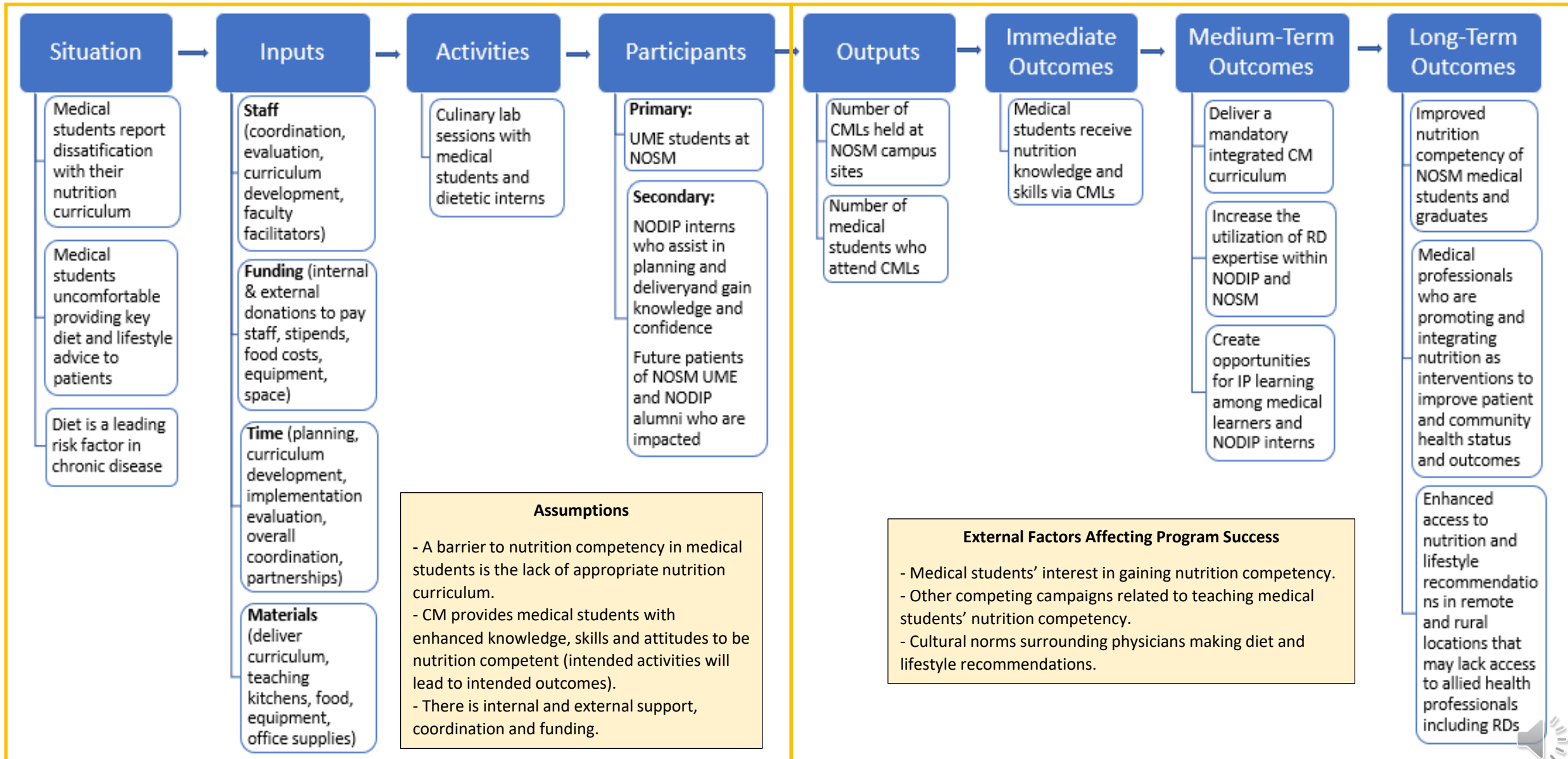


Provide medical students with tools to improve their own health

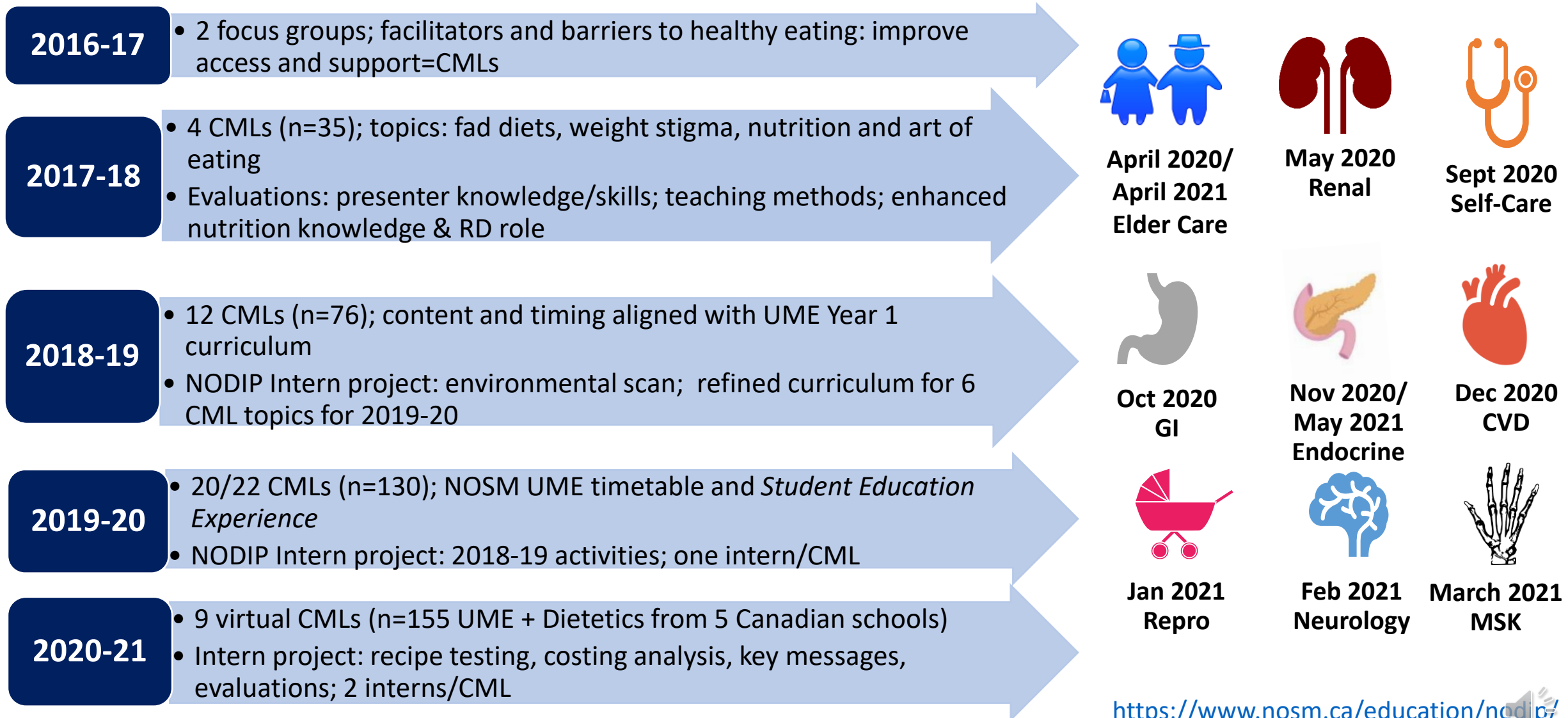
Source: Georgetown University School of Medicine



Program Goal: Improve the overall nutrition competency of NOSM medical students and graduates through a Culinary Medicine (CM) Program



Timeline and Activities



<https://youtu.be/ZtkBgaKdN4o>

<https://www.nosm.ca/education/nodip/>
(NODIP and NOSM Medical Students tab)



Cook Time: 1 hour		Metric Volume								
Recipe Scale Used:		Metric Volume								
Ingredient Name	Recipe Imperial Amount (Cups, Tbs, #)	Recipe Metric Volume Amount	Unit (ml, L)	Recipe Metric Weight Amount	Unit (g, kg)	Volume Conversion (Metric to Imperial)	Purchased amount	Purchased Unit (kg, ml, L)	Price as purchased in \$	Cost per recipe
Apple Cinnamon Sauce	1/2 cup	125 ml	ml			NA	420 ml	2.49	\$ 6.70	
Egg	1 each	NA	NA			NA	12 each	2.95	\$ 9.21	
Canola oil	1/4 cup	60 ml	ml			NA	473 ml	3.19	\$ 0.40	
Cottage Cheese 2%	1/2 cup	125 ml	ml	113 g		0.90	500 g	4.29	\$ 0.97	
Vanilla extract	2 tsp	10 ml	ml				250 ml	4.99	\$ 0.20	
Milk	1/2 cup + 2 Tbs	155 ml	ml				1,000 ml	2.39	\$ 0.37	
AP Flour	1.5 cups	350 ml	ml	187.5 g		0.54	2,490 g	5.49	\$ 0.41	
cocoa natural	1/3 cup	75 ml	ml	27 g		0.49	225 g	5.99	\$ 0.96	
sugar	6 Tbs	90 ml	ml	180 g		0.03	1,000 g	3.99	\$ 0.39	
Baking powder	1/2 tsp	2.5 ml	ml	2.5 g		0.92	225 g	4.49	\$ 0.05	
Baking soda	3/4 tsp	4.5 ml	ml	3.5 g		0.70	500 g	2.19	\$ 0.92	
Dry milk powder	1/2 cup	125 ml	ml	34 g		0.27	1,000 g	12.99	\$ 0.40	
Boiling water	2 Tbs	45 ml	ml	45 g		1	NA	NA		
Total									\$ 5.97	
Serving									10	
Cost per									\$ 0.51	
Scenario 1: How to approach a recipe conversion:										
ml used in recipe and item bought is ml										
	Recipe Metric Volume Amount	unit	÷	Purchased amount	unit	×	purchased in \$	Cost per		
Ex: Canola oil	60	ml	÷	473	ml	×	3.19	\$ 0.40		
Sample								\$ 0.00		
Scenario 2: How to approach a recipe conversion:										
g used in recipe and item bought is g										
	Recipe Metric Unit	Unit	÷	Purchased amount	unit	×	purchased in \$	Cost per		
Ex: Cottage Cheese 2%	113	g	÷	500	g	×	4.29	\$ 0.97		
Sample								\$ 0.00		

Virtual Challenges and Opportunities



Academic Requirements, Schedules & Workloads

- Time zone differences and schedules
- Virtual learning overload
- Voluntary vs mandatory curriculum



Facilities, equipment and supplies

- Physical vs virtual kitchen spaces
- Virtual learning platforms
- Food supplies and costs
- Personal kitchen equipment & safety



Professional/Student Connections

- RD faculty expertise
- Interprofessional student experiences
- Multi-school/provincial collaborations

Teaching Format

“cook-along idea is great”

“diversity of content and speakers”

“tying knowledge back to a realistic case presentation.

Also excellent muffins!”

Nutrition Competence

“ 24-hour diet history with the patient”

“psychosocial factors in nutrition”

“multidisciplinary approach”

“recognize opportunity to “prescribe nutrition”

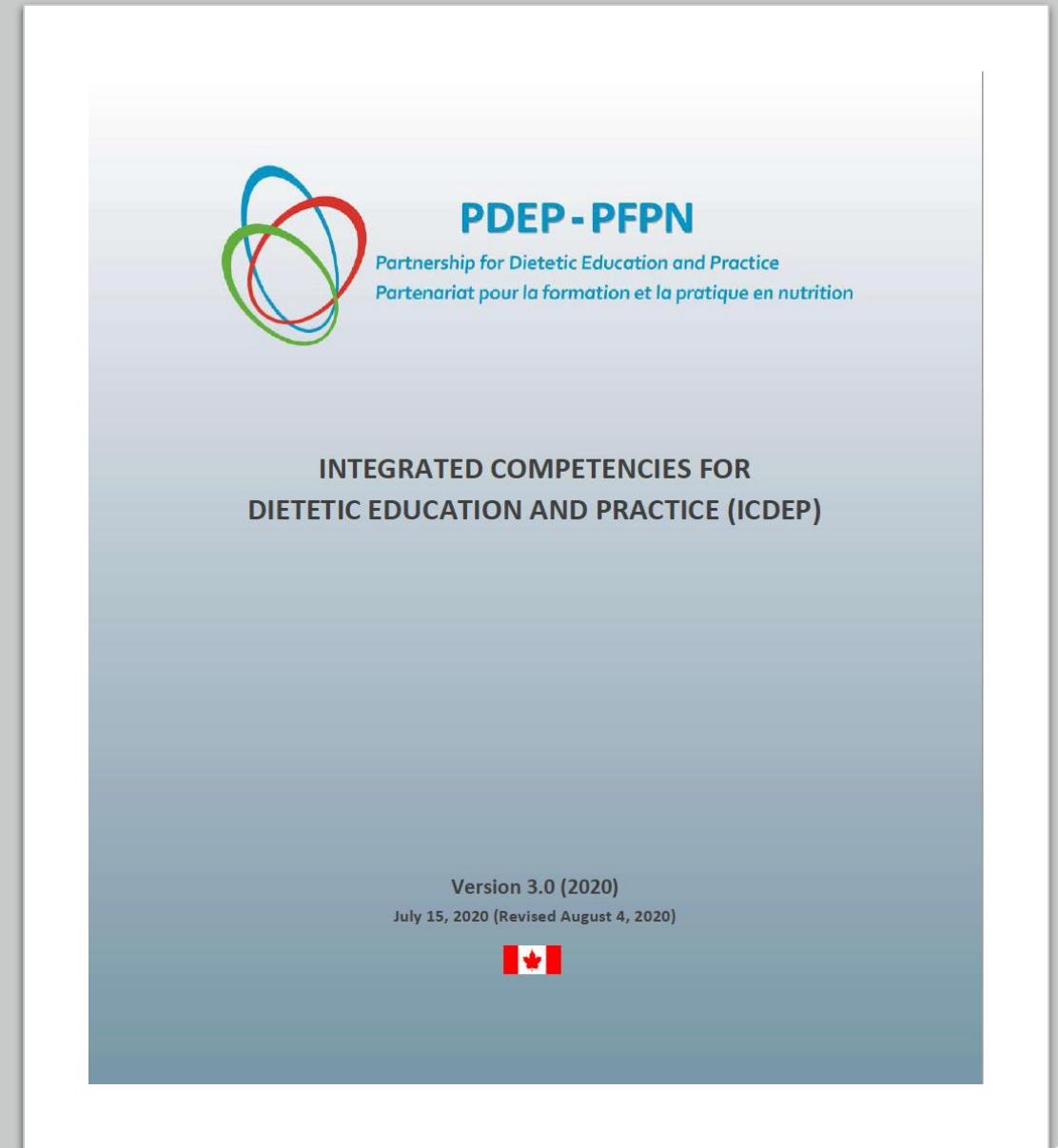
“very evidence-based and super useful for my future practice!”

Personal Wellbeing

“more cooking skill workshops (ie. basic cooking skills), and how to maintain a healthy diet as physicians”



1. FOOD AND NUTRITION EXPERTISE
2. PROFESSIONALISM AND ETHICS
3. COMMUNICATION AND COLLABORATION
4. MANAGEMENT AND LEADERSHIP
5. NUTRITION CARE
6. POPULATION HEALTH PROMOTION
7. FOOD PROVISION



1. FOOD AND NUTRITION EXPERTISE

- 1.01 Apply understanding of food composition and food science
- 1.03 Apply understanding of human nutrition and metabolism
- 1.04 Apply understanding of dietary requirements and guidelines
- 1.05 Apply understanding of dietary practices

2. PROFESSIONALISM AND ETHICS

- 2.01 Practice within the context of Canadian diversity
- 2.03 Practice in a manner that promotes cultural safety
- 2.04 Employ a client-centred approach
- 2.09 Employ an evidence-informed approach to practice

3. COMMUNICATION AND COLLABORATION

- 3.01 Use appropriate communication approaches
- 3.02 Use effective written communication skills
- 3.03 Use effective oral communication skills
- 3.04 Use effective electronic communication skills
- 3.05 Use effective interpersonal skills
- 3.06 Engage in teamwork
- 3.07 Participate in collaborative practice

4. MANAGEMENT AND LEADERSHIP

- 4.07 Foster development of food literacy in others**
- 4.08 Foster development of food skills in others**

5. NUTRITION CARE

- 5.01 Conduct nutrition assessment
- 5.02 Determine nutrition diagnosis
- 5.03 Plan nutrition intervention(s)
- 5.04 Implement nutrition intervention(s)

6. POPULATION HEALTH PROMOTION

- 6.01 Assess food- and nutrition-related situation of communities and populations
- 6.02 Determine food- and nutrition-related issues of communities and populations

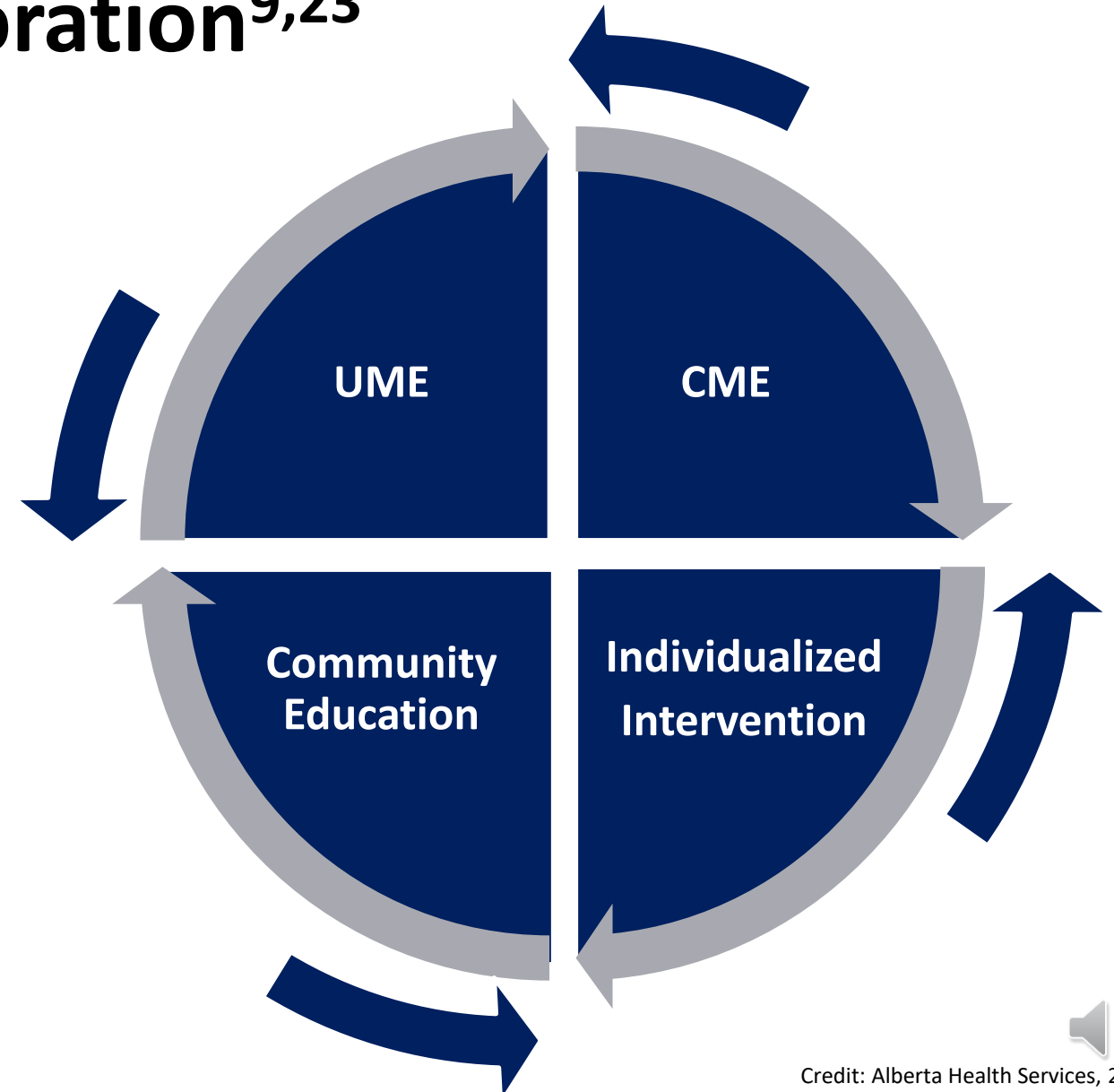
7. FOOD PROVISION

- 7.01 Determine food provision requirements of a group / organization
- 7.02 Plan food provision

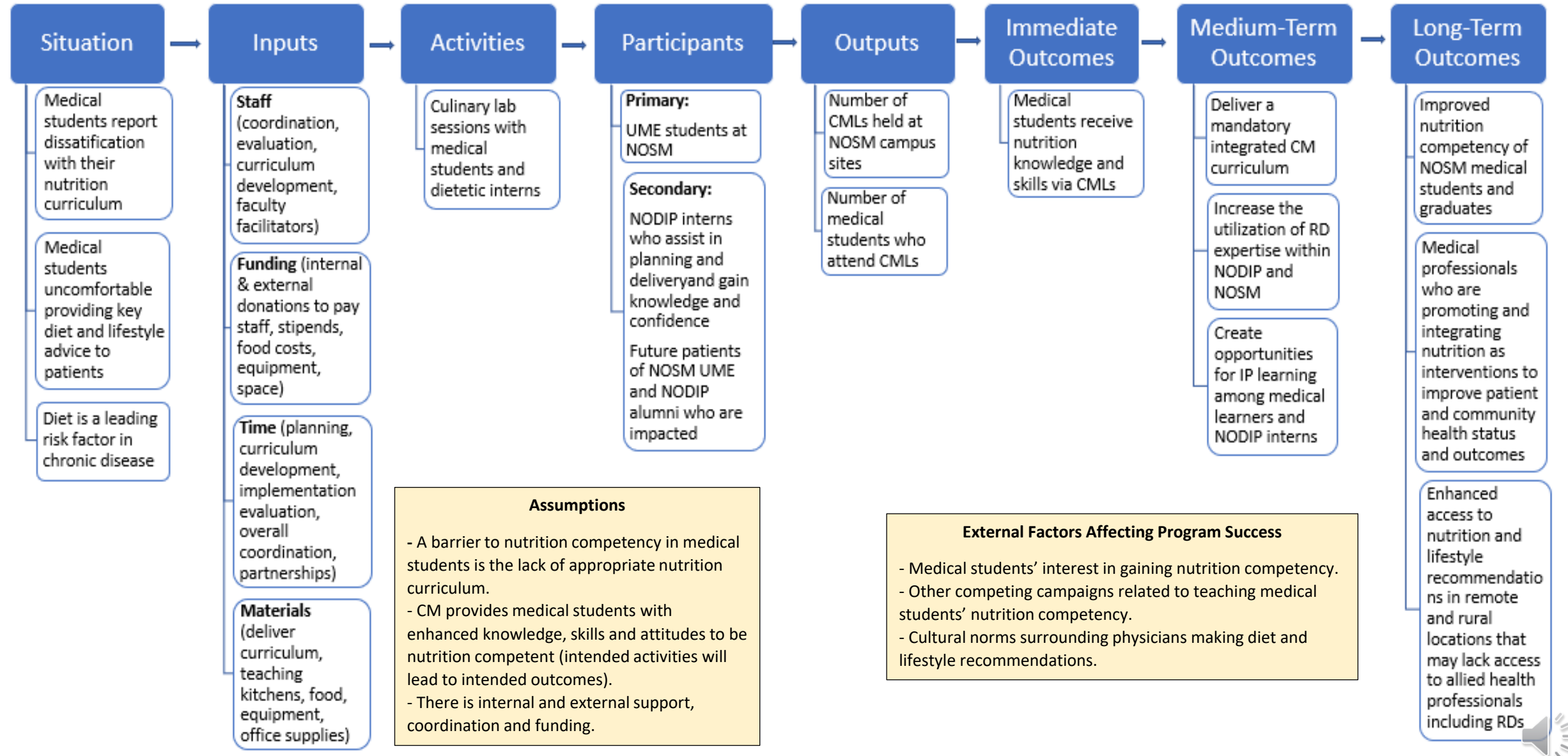


Culinary Medicine and Interprofessional Collaboration^{9,23}

1. To understand the roles of the Registered Dietitian (RD) in culinary medical education.
2. To engage in activities to build food literacy with medical students in a culinary medicine setting.
3. To apply an evidence-informed approach to culinary medicine curriculum development, implementation and evaluation.
4. To enhance the development of effective communication and collaborative practice skills as future RDs.



Program Goal: Improve the overall nutrition competency of NOSM medical students and graduates through a Culinary Medicine (CM) Program





Contact Information

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