

The Rutgers University logo, featuring the word "RUTGERS" in a large, red, serif font. The letter "R" is stylized with a long, sweeping tail that extends downwards and to the left.

School of Health Professions

Advancing the Role of Dietitians Across Clinical Practice Settings

27 September, 2023

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**Professor & Associate Dean for Global Affairs, School of Health
Professions**

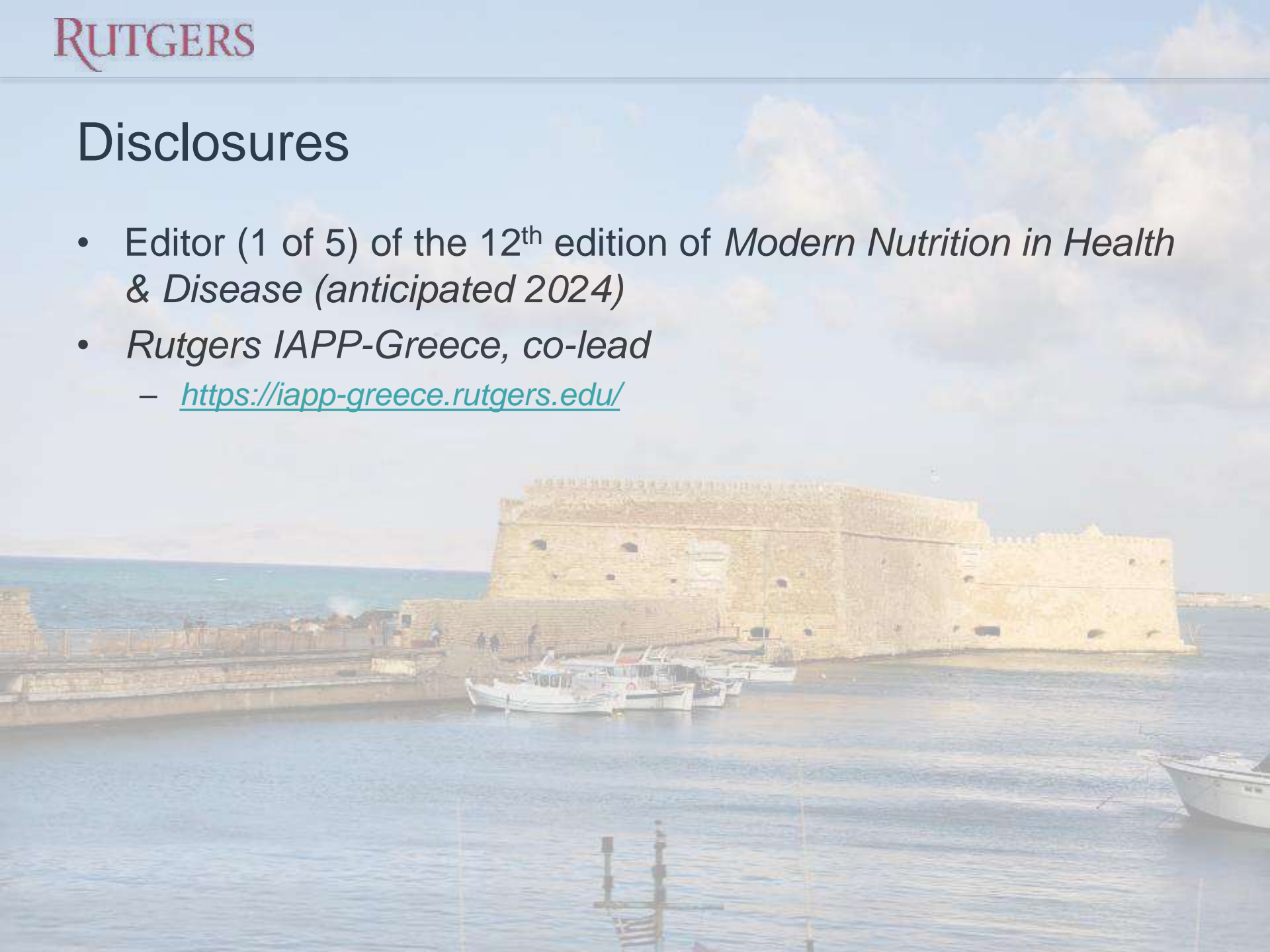
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Disclosures

- Editor (1 of 5) of the 12th edition of *Modern Nutrition in Health & Disease (anticipated 2024)*
- *Rutgers IAPP-Greece, co-lead*
 - <https://iapp-greece.rutgers.edu/>



Objectives: For Clinical Care Settings:

- Discuss the guidelines for dietetic practice in the U.S.
 - Standards of Practice, Levels of Practice, Specialist & Advanced Practice Credentials
- Discuss the use of Evidence-Based Practice Guidelines to guide the roles of dietitians
 - Examples in Critical Care, Diabetes, & Weight Management
- Describe the roles of dietitians in the U.S.
- Discuss Autonomous Practice by dietitians
- Describe how Artificial Intelligence (AI) has advanced practice

The past 100 years:

How the role of the dietitian has advanced

Hospitals, nursing homes, dialyses, and clinic settings

Took orders from physicians, visited patients, nutrition assessment and diet counseling

Menu delivery, collection & correction

Meal rounds

1920s – 1960s

1970s – 1990s

The above +

Dietitians in sports, fitness, supermarkets, homecare, consultants

Specialist & Advanced Practice Certifications

The Nutrition Care Process & Model

Standards of Practice & Professional Performance

Nutrition-focused physical exam, tube feeding placement

Order writing

Dietitians heading health care teams, directing patient care

2000 – Present

The above +

Dietitians in private practice & some other settings

Rounding with physicians & nurses, Nutrition Support Teams

Conducted nutrition assessment to screen for malnutrition

Introduction of physical exam

Defining Roles and Responsibilities of Dietitians

- **In the U.S., the Commission on Dietetic Registration is the credentialing body for dietitians**
www.cdrnet.org
- **Standards of Practice & Scopes of Practice**
 - “the range of roles, activities, laws and regulations within which nutrition and dietetics practitioners perform ... typically established within the practice act and interpreted and controlled by the agency or board that regulates the practice of the profession in a given state.”

Defining Roles and Responsibilities of Dietitians

- **Academy of Nutrition & Dietetics:**
- **Code of Ethics**
- **Standards of Practice (SOP) and Standards of Professional Performance (SOPP)**
 - “tools for credentialed nutrition and dietetics practitioners that describe competent levels of practice. The SOP in nutrition care relates to direct care of individuals, and the SOPP focuses on domains of professional performance”

International Confederation of Dietetic Associations (ICDA) Provide International Standards. <https://www.internationaldietetics.org/International-Standards.aspx>



- **Dietitian-Nutritionist:**
 - *a professional who applies the science of food & nutrition to promote health & prevent & treat disease to optimize the health of individuals, groups, communities & populations*
- **International Code of Ethics & Code of Good Practice for Dietitians-Nutritionists**
- **International Competence Standards for Dietitians-Nutritionists**
- **International Standards for Education**

Academy of Nutrition and Dietetics: Revised 2017 Scope of Practice for the Registered Dietitian Nutritionist



The Academy Quality Management Committee

ABSTRACT

The Academy of Nutrition and Dietetics (Academy) is the world's largest organization that represents credentialed nutrition and dietetics practitioners—registered dietetics technicians, registered (NDTRs). RDNs integrate research, professional discovery; collaborate to solve the greatest food and nutrition challenges now and food, wellness, and health sectors; have a global impact in eliminating all forms of and dietetics practitioners and expand workforce capacity and capability. The position of the Academy on the essential role of the RDN in the direction and delivery for the RDN is composed of education and credentialing, practice resources, Academy codes of ethics, accreditation standards, state and federal regulations, national guidelines. Revised 2017 Scope of Practice for the RDN is used in conjunction with the Revised Standards of Professional Performance (SOPP) for RDNs. The SOPP address activities address behaviors related to the professional role of RDNs. These standards reflect practice and professional performance for RDNs. A companion document addresses J Acad Nutr Diet. 2018;118:141-165.

SCOPE OF PRACTICE

For the RDN, scope of practice focuses on food, nutrition, and dietetics practice, as well as related services developed, directed, and provided by the RDN to: protect the public, community, and populations; enhance health and well-being of patients/clients and communities; and deliver quality products, programs, and services. The scope of practice in nutrition and dietetics encompasses the range of roles, activities, and regulations within which nutrition and dietetics practitioners perform [REDACTED]

Our practice is guided by the Code of Ethics



Code of Ethics for the Nutrition and Dietetics Profession

Effective Date: June 1, 2018



Preamble:

When providing services the nutrition and dietetics practitioner adheres to the core values of customer focus, integrity, innovation, social responsibility, and diversity. Science-based decisions, derived from the best available research and evidence, are the underpinnings of ethical conduct and practice.

This Code applies to nutrition and dietetics practitioners who act in a wide variety of capacities, provides general principles and specific ethical standards for situations frequently encountered in daily practice. The primary goal is the protection of the individuals, groups, organizations, communities, or populations with whom the practitioner works and interacts.

The nutrition and dietetics practitioner supports and promotes high standards of professional practice, accepting the obligation to protect clients, the public and the profession; upholds the Academy of Nutrition and Dietetics (Academy) and its credentialing agency the Commission on Dietetic Registration (CDR) Code of Ethics for the Nutrition and Dietetics Profession; and shall report perceived violations of the Code through established processes.

The Academy/CDR Code of Ethics for the Nutrition and Dietetics Profession establishes the principles and ethical standards that underlie the nutrition and dietetics practitioner's roles and conduct. All individuals to whom the Code applies are referred to as "nutrition and dietetics practitioners". By accepting membership in the Academy and/or accepting and maintaining CDR credentials, all nutrition and dietetics practitioners agree to abide by the Code.

Code of Ethics Principles & Standards

1. Competency & professional development in practice (Non-maleficence)
2. Integrity in personal & organizational behaviors & practices (Autonomy)
3. Professionalism (Beneficence)
4. Social responsibility for local, regional, national, global nutrition & well-being (Justice)

2017 Academy of Nutrition & Dietetics Standards of Practice & Professional Responsibility for Provision of Nutrition Care

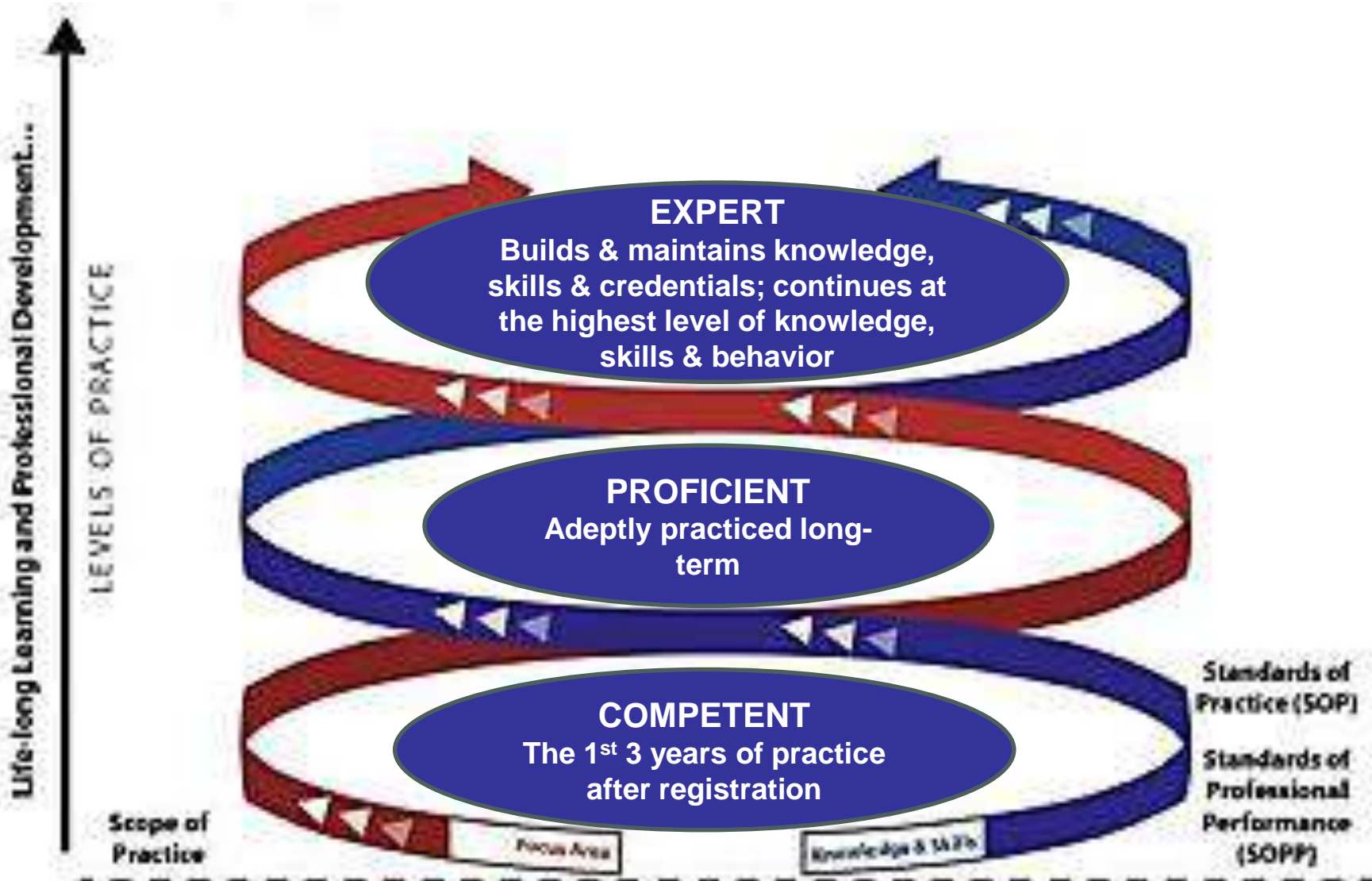
Nutrition
Care
Process

Evidence
based
practice
guidelines
+ Clinical
Expertise

Make
referrals,
provide
intervention
document
care

Order writing
privileges consistent
with state laws

Levels of Practice



Specialist Credentials Available

Diabetes

- Certified Diabetes Care & Education Specialist (CDCES)
- Board Certified-Advanced Diabetes Management (BC-ADM)

Gerontological Nutrition

Lactation

Nutrition Support

Obesity & Weight Management

Oncology Nutrition

Pediatric Critical Care Nutrition

Pediatric Nutrition

Renal Nutrition

Sports Dietetics

Association of Diabetes Care & Education Specialists

Becoming a Certified Diabetes Care and Education Specialist[®] (CDCES[®])

The CDCES credential is maintained and fully administered by the Certification Board for Diabetes Care and Education (CBDCE), formerly the National Certification Board for Diabetes Educators. Learn more about the eligibility requirements below, or at CBDCE.org.

Don't have enough experience to sit for the CDCES exam? Consider an [ADCES Certificate Program](#) instead.



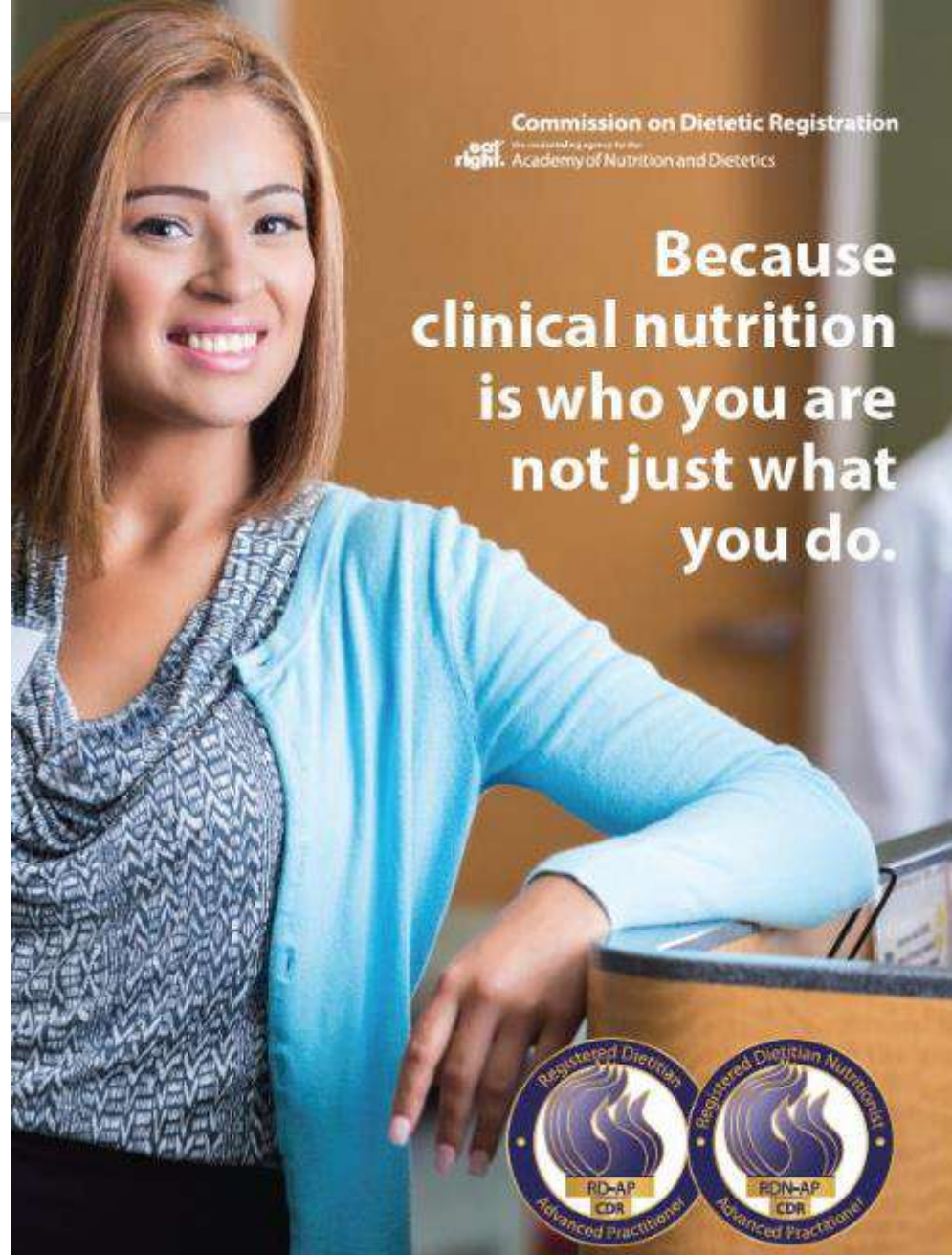
<https://www.diabeteseducator.org/education/adces-certificates>

Commission on Dietetic Registration Specialist Credentials



- Board Certified Specialist in Gerontological Nutrition
- Board Certified Specialist in Obesity and Weight Management
- Board Certified Specialist in Oncology Nutrition
- Board Certified Specialist in Pediatric Nutrition
- Board Certified Specialist in Pediatric Critical Care Nutrition
- Board Certified Specialist in Renal Nutrition
- Board Certified Specialist in Sports Dietetics

- Are you the architect of change in your facility or organization?
- Do you identify practice challenges and work to find solutions?
- Are you called upon as the nutrition expert?
- Then YOU may be an advanced practitioner.



Board Certified – Advanced Diabetes Management Association of Diabetes Care & Education Specialists

The BC-ADM Credential

Showcase your expertise in advanced diabetes management.

The person holding the BC-ADM (Board Certified - Advanced Diabetes Management) credential skillfully manages complex patient needs and assists patients with their therapeutic problem-solving. Within their scope of practice, healthcare professionals who hold the BC-ADM certification:

- Adjust medications
- Treat and monitor acute and chronic complications and other comorbidities
- Counsel patients on lifestyle modifications
- Address psychosocial issues
- Participate in research and mentoring

https://www.diabeteseducator.org/education/certification/bc_adm

FROM THE ACADEMY



Medical Nutrition Therapy Interventions Provided by Dietitians for Adult Overweight and Obesity Management: An Academy of Nutrition and Dietetics Evidence-Based Practice Guideline



Maria Morgan-Bathke, PhD, MBA, RD, CD, FAND; Hollie A. Raynor, PhD, RD; Suzanne Domel Baxter, PhD, RD, LD, FADA, FAND;
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Mary Rozga, PhD, RDN

ABSTRACT







Overweight and obesity affect most adults living in the United States and are causally linked to several adverse health outcomes. Registered dietitian nutritionists or international equivalents (dietitians) collaborate with each client and other health care professionals to meet client-centered goals, informed by the best available evidence, and translated through a lens of clinical expertise and client circumstances and preferences. Since the last iteration of the Academy of Nutrition and Dietetics guideline on adult weight management

needed. The objective of this evidence-based practice guideline is to provide recommendations for dietitians who deliver medical nutrition therapy behavioral interventions for adults (18 years and older) with overweight and obesity to improve cardiometabolic outcomes, quality of life, and weight outcomes, when appropriate for and desired by the client. Recommendations in this guideline highlight the importance of considering complex contributors to overweight and obesity and individualizing interventions to client-centered goals based on specific needs and preferences and shared decision making. The described recommendations have the po-

and to address other barriers to overweight and obesity management interventions. It is essential for dietitians to collaborate with clients and interprofessional health care teams to provide high-quality medical nutrition therapy interventions using the nutrition care process to promote attainment of client-centered outcomes for adults with overweight or obesity.

<p>2.0. Delivering MNT Interventions</p>	
<p>2.1. RDNs or international equivalents may provide at least 5 interactive sessions, when feasible and desired by each adult client with overweight or obesity, to achieve the greatest potential improvement in outcomes. Frequency of contacts should be tailored to each client's preferences and needs.</p>	2C
<p>2.2. RDNs or international equivalents should provide overweight and obesity management interventions for a duration of at least 1 year to improve and optimize cardiometabolic and weight outcomes, as appropriate for and desired by each client.</p>	1C
<p>2.3. After completion of overweight and obesity management interventions, RDNs or international equivalents should provide follow-up contacts at least every 3 months, for as long as desired by each client, to facilitate maintenance of weight loss and improved cardiometabolic outcomes.</p>	1C
<p>2.4. RDNs or international equivalents may use telehealth, in-person contacts, or a blend of these delivery methods when providing MNT interventions to adults with overweight or obesity. Outcomes may be optimized by including in-person contacts.</p>	2C
<p>2.5. RDNs or international equivalents may use both individual and group delivery methods when providing MNT interventions to adults with overweight or obesity, as feasible and appropriate for each client.</p>	2C
<p>2.6. RDNs or international equivalents providing MNT interventions for adults with overweight and obesity should coordinate care in a variety of settings, including primary care/ outpatient, community, and workplace settings, to access and support each client with resources in the environment that best suits individualized needs.</p>	1B

 **Guidelines for the provision of nutrition support therapy in the adult critically ill patient: The American Society for Parenteral and Enteral Nutrition** DOI: 10.1002/jpen.2267

Charlene Compher PhD, RD¹  | Angela L. Bingham PharmD^{2,3}  | Michele McCall MSc, RD⁴ | Jayshil Patel MD⁵  | Todd W. Rice MD, MSc⁶  | Carol Braunschweig PhD⁷  | Liam McKeever PhD, RDN⁷ 

Abstract

Background: This guideline updates recommendations from the 2016 American Society for Parenteral and Enteral Nutrition (ASPEN)/Society of Critical Care Medicine (SCCM) critical care nutrition guideline for five foundational questions central to critical care nutrition support.

Methods: The Grading of Recommendations, Assessment, Development and Evaluation (GRADE) process was used to develop and summarize evidence for clinical practice recommendations. Clinical outcomes were assessed for (1) higher vs lower energy dose, (2) higher vs lower protein dose, (3) exclusive isocaloric parenteral nutrition (PN) vs enteral nutrition (EN), (4) supplemental PN (SPN) plus EN vs EN alone, (5A) mixed-oil lipid injectable emulsions (ILEs) vs soybean oil, and (5B) fish oil (FO)-containing ILE vs non-FO ILE. To assess safety, weight-based energy intake and protein were plotted against hospital mortality.

Results: Between January 1, 2001, and July 15, 2020, 2320 citations were identified and data were abstracted from 36 trials including 20,578 participants. Patients receiving FO had decreased pneumonia rates of uncertain clinical significance. Otherwise, there were no differences for any outcome in any question. Owing to a lack of certainty regarding harm, the energy prescription recommendation was decreased to 12–25 kcal/kg/day.

Conclusion: No differences in clinical outcomes were identified among numerous nutrition interventions, including higher energy or protein intake, isocaloric PN or EN, SPN, or different ILEs. As more consistent critical care nutrition support data become available, more precise recommendations will be possible. In the meantime, clinical judgment and close monitoring are needed. This paper was approved by the ASPEN Board of Directors.

The guidelines are based on evidence & implemented by dietitians & other health professionals

Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition: Revised 2021 standards of practice and standards of professional performance for registered dietitian nutritionists (competent, proficient, and expert) in nutrition support DOI: 10.1002/ncp.10774

Mandy L. Corrigan MPH, RD¹ | Elizabeth Bobo MS, RD² | Christina Rollins MBA, RDN³ | Kris M. Mogensen MS, RD-AP⁴

Abstract

Nutrition support is a therapy that crosses all ages, diseases, and conditions as health care practitioners strive to meet the nutrition requirements of individuals who are unable to meet nutrition and/or hydration needs with oral intake alone. Registered dietitian nutritionists (RDNs), as integral members of the nutrition support team provide needed information, such as identification of malnutrition risk, macro- and micronutrient requirements, and type of nutrition support therapy (eg, enteral or parenteral), including the route (eg, nasogastric vs nasojejunal or tunneled catheter vs port). The Dietitians in Nutrition Support Dietetic Practice Group, American Society for Parenteral and Enteral Nutrition, along with the Academy of Nutrition and Dietetics Quality Management Committee, have updated the Standards of Practice (SOP) and Standards of Professional Performance (SOPP) for RDNs working in nutrition support. The

SOP and SOPP for RDNs in Nutrition Support provide indicators that describe the following 3 levels of practice: competent, proficient, and expert. The SOP uses the Nutrition Care Process and clinical workflow elements for delivering patient/client care. The SOPP describes the 6 domains that focus on professional performance. Specific indicators outlined in the SOP and SOPP depict how these standards apply to practice. The SOP and SOPP are complementary resources for RDNs and are intended to be used as a self-evaluation tool for assuring competent practice in nutrition support and for determining potential education

The SOP & SOPP can help dietitians determine their day-to-day job duties

Nutrition Therapy for Adults With Diabetes or Prediabetes: A Consensus Report

Diabetes Care 2019;42:731–754 | <https://doi.org/10.2337/dci19-0014>

This Consensus Report is intended to provide clinical professionals with evidence-based guidance about individualizing nutrition therapy for adults with diabetes or prediabetes. Strong evidence supports the efficacy and cost-effectiveness of nutrition therapy as a component of quality diabetes care, including its integration into the medical management of diabetes; therefore, it is important that all members of the health care team know and champion the benefits of nutrition therapy and key nutrition messages. Nutrition counseling that works toward improving or maintaining glycemic targets, achieving weight management goals, and improving cardiovascular risk factors (e.g., blood pressure, lipids, etc.) within individualized treatment goals is recommended for all adults with diabetes and prediabetes.

Though it might simplify messaging, a “one-size-fits-all” eating plan is not evident for the prevention or management of diabetes, and it is an unrealistic expectation given the broad spectrum of people affected by diabetes and prediabetes, their cultural backgrounds, personal preferences, co-occurring conditions (often referred to as comorbidities), and socioeconomic settings in which they live. Research provides clarity on many food choices and eating patterns that can help people achieve health goals and quality of life. The American Diabetes Association (ADA) emphasizes that medical nutrition therapy (MNT) is fundamental in the overall diabetes management plan, and the need for MNT should be reassessed frequently by health care providers in collaboration with people with diabetes across the life span, with special attention during times of changing health status and life stages (1–3).

This Consensus Report now includes information on prediabetes, and previous ADA nutrition position statements, the last of which was published in 2014 (4), did not. Unless otherwise noted, the research reviewed was limited to those studies conducted in adults diagnosed with prediabetes, type 1 diabetes, and/or type 2 diabetes. Nutrition therapy for children with diabetes or women with gestational diabetes mellitus is not addressed in this review but is covered in other ADA publications, specifically *Standards of Medical Care in Diabetes* (5,6).

The evidence based guidelines outline what & how medical nutrition therapy is provided. And, provide recommended duties of the dietitian.

Table 2—Academy of Nutrition and Dietetics evidence-based nutrition practice guidelines—recommended structure for the implementation of MNT for adults with diabetes (9)

Initial series of MNT encounters: The RDN should implement three to six MNT encounters during the first 6 months following diagnosis and determine if additional MNT encounters are needed based on an individualized assessment.

MNT follow-up encounters: The RDN should implement a minimum of one annual MNT follow-up encounter.

Roles of Dietitians Across Clinical Settings in the US

Acute Care Hospitals

Long-Term / Rehabilitation Care

Long Term Acute Care Hospital (LTACH)

Ambulatory Care Clinics

Physician & Other Health Professionals' Offices

Private Practice

Gyms and Fitness Centers

Nutrition Care Process & Model Framework

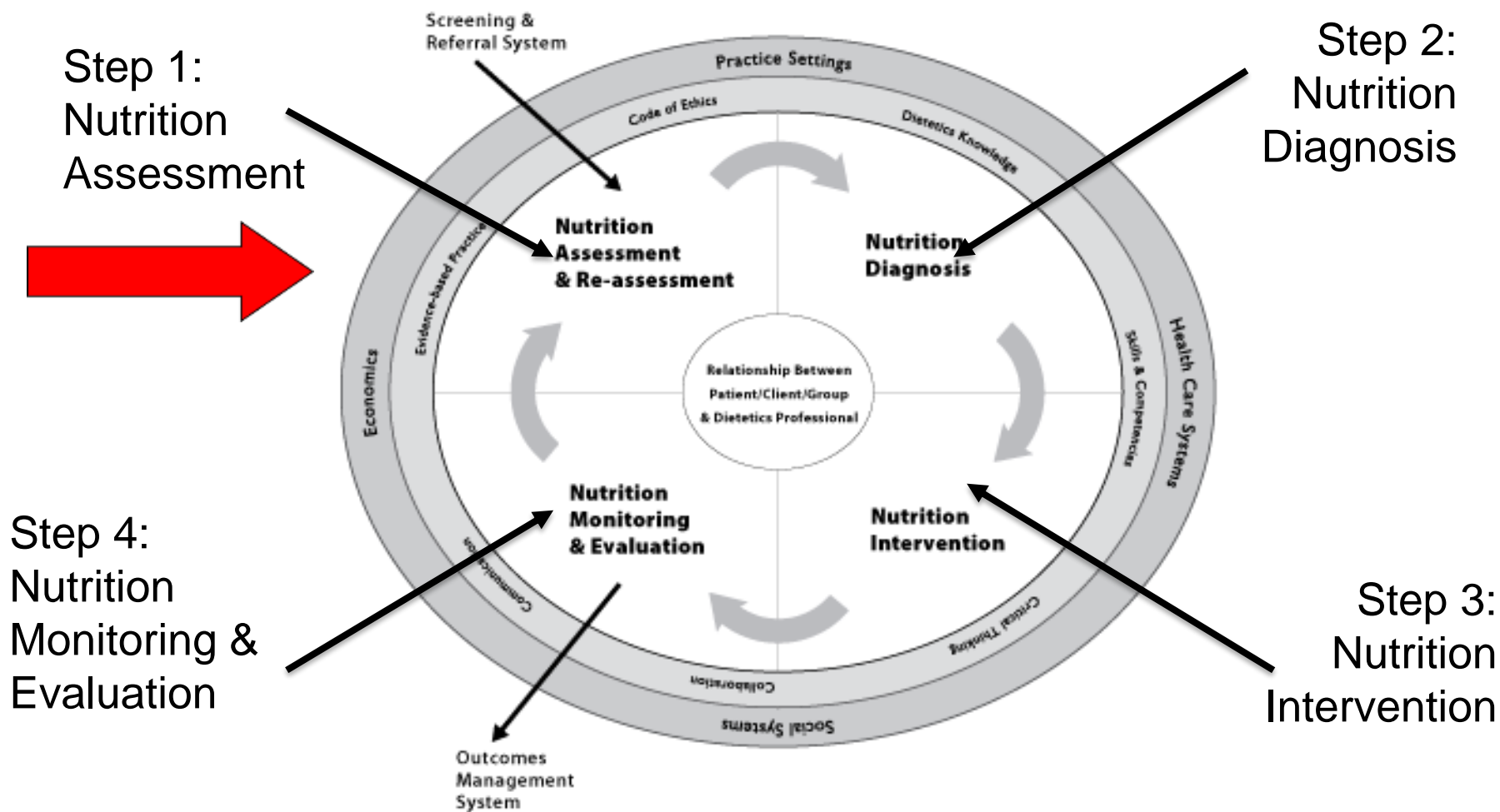
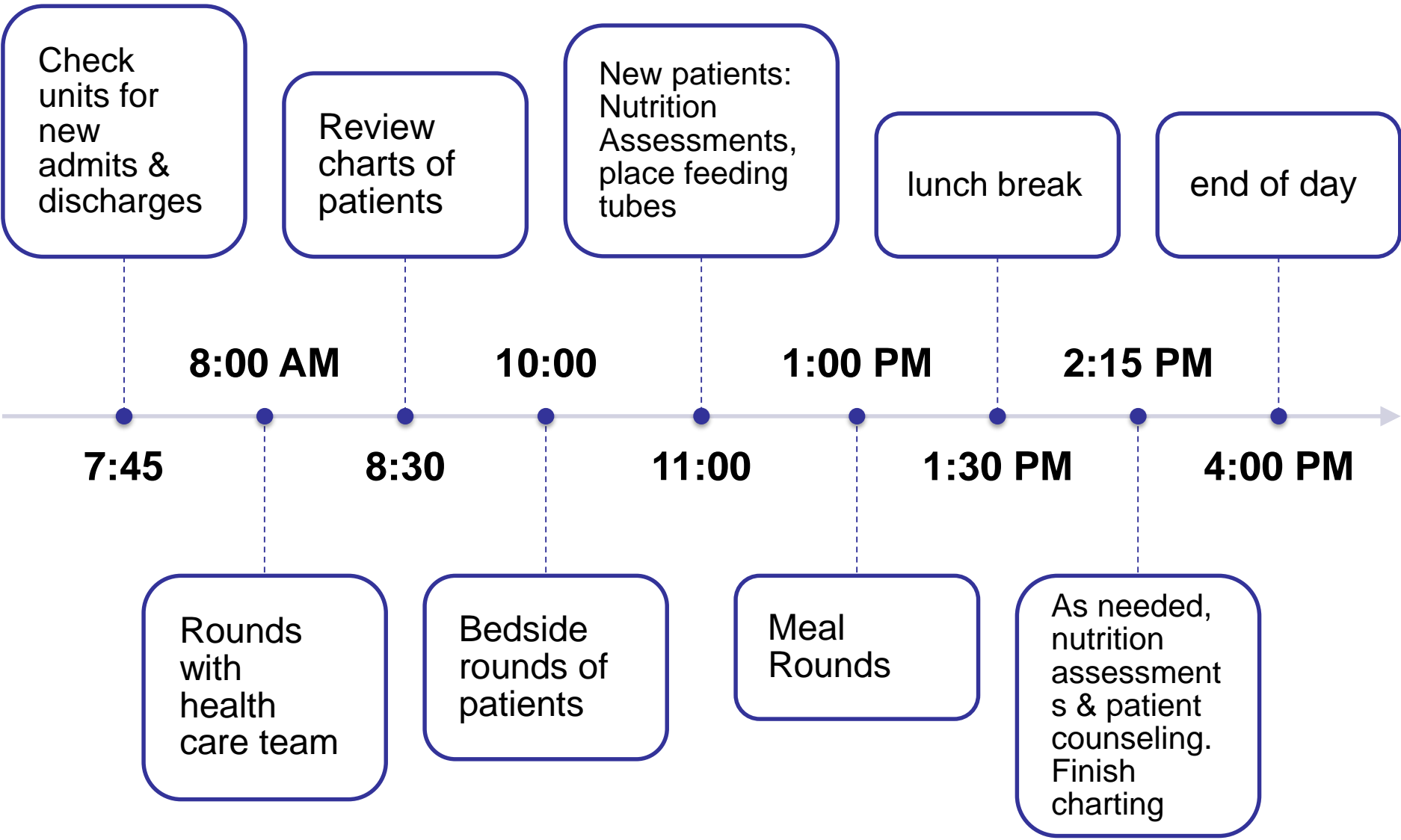


Image of NCPM Framework from the Academy of Nutrition and Dietetics,
Available at www.eatright.org

A day in the life of the Dietitian in Acute Care



Report from the Advanced-Level Clinical Practice Audit Task Force of the Commission on Dietetic Registration: Results of the 2013 Advanced-Level Clinical Practice Audit

Charles Mueller, PhD, RD, CDN, CNSC; Dick Rogers; Rebecca A. Brody, PhD, RD, LD, CNSC; Clarence L. Chaffee, Jr; Riva Touger-Decker. PhD. RD. FADA

Journal of the Academy of Nutrition & Dietetics 2015. 115(4): 824

2013 study of advanced-level practice in the U.S.
Autonomy in clinical practice was partially defined by order writing practices for:

- Diets
- Dietary supplements
- Enteral nutrition
- Initiating consults
- Laboratory/other tests
- Parenteral nutrition

Power, autonomy and interprofessional practice in dietitian clinical decision making: An interpretive study in acute hospitals

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Abstract

Dietitians learn clinical decision making (CDM) predominantly as an autonomous cognitive process that considers the needs and preferences of the patient. Although interprofessional education is increasing in tertiary dietetic programmes, a paucity of research exists that explores the nature of how practising dietitians make decisions, independent or otherwise. This qualitative interpretative study explored the nature of experienced dietitian CDM in the acute care setting. Philosophical hermeneutic principles guided text construction and interpretation via in-depth, semi-structured interviews with practising dietitians with at least 3 years of experience. A reference focus group commented on the emerging findings, increasing the rigour of the research. Ten dietitians participated in the interviews and there were five dietitians in the reference focus group. CDM was found to be a highly social phenomenon with varying degrees of autonomy involving complex power relations with various other health professionals, in particular, medical practitioners. Dietitians respond to existing power relations in key ways, including building and maintaining relationships, advocating on behalf of the patient and negotiating decisions with other healthcare staff when in pursuit of improved health and nutrition related outcomes for patients. Strategic interprofessional communication skills are foundational to effective patient care and advancing the role of the dietitian. Power and autonomy in dietitian CDM are important concepts that could inform interprofessional education when seeking to promote both effective dietetic and interprofessional practice.

The doctor : dietitian power challenge. Interpersonal skills required!



Key points

1. In the acute care setting, a dietitian's clinical decision making (CDM) is supported by interpersonal and communication skills to effectively navigate power relations with medical practitioners aiming to provide quality patient care.
2. Managing power relations requires dietitians to build and maintain professional relationships, negotiate and advocate in order to facilitate patient care.
3. Professional training and development would benefit from integrating interprofessional education that explicitly explores power, role appreciation, emotional intelligence skills and decision-making autonomy to support quality CDM.

- **In the U.S.:**
- Roles of dietitians have been expanding
 - Late 1990s: Nutrition focused physical exam introduced
 - Early 2000s: Tube feeding placement introduced &
- **2014:** Federally, Registered Dietitians were given nutrition-related order writing privileges if it was in accordance with state laws in hospitals
- **2017:** the same in Long Term Care settings
- **But, despite this,**
 - Not all hospitals & long-term care facilities in all states allow this
 - AND,
 - Not all dietitians want these privileges
- Why?

Factors that Deter Autonomy & Expanded Roles

- Fear of making a mistake
- Desire for further training
- Lack of confidence
- Power struggles
- Imposter syndrome

Factors that Help Autonomy & Expanded Roles

- Advanced practice credentials
- Training
- Mentors
- Strong partnerships with physicians

Digital Technology & AI Applications in Dietetics



Which applications are grounded in Scientific Evidence, thus supported by research?

Evidence, thus supported by research?

Mobile technologies
Electronic Health Records
Nutrition Assessment Tools
Gaming
Telehealth
Chatbots
Social Media
Modeling for the identification of disease
Predictive equations

Table 1 Some mobile applications for weight loss management



- **Fasting timer**—function to track fasting and see effect of fasting over time
- **Food tracker**—includes ability to input foods based on scanned bar code, filter food search tool based on brands, restaurants, etc. Uses multiple databases to integrate nutritional data—Nutrition Coordinating Center Food & Nutrient Database through the University of Minnesota (NCCDB), United States Department of Agriculture National Nutrient Database for Standard Reference, The Canadian Nutrient File (CNF 2015), Irish Food Composition Database (IFCDB), The Dutch Food Composition Database (NEVO), McCance and Widdowson’s The Composition of Foods Integrated Database (United Kingdom food supply), Australian Food Composition Database (NUTTAB). Nutrition daily report includes calories consumed, macronutrient calories and percentages, protein by amino acid composition, fat by composition including omega-3 and omega-6, calories burned, basal metabolic rate, fiber intake, micronutrients including vitamin A, potassium, vitamin d, vitamin E, vitamin K, B vitamins (B1, B2, B3, B5, B6, B12, folate), minerals (calcium, copper, iron, magnesium, manganese, phosphorus, potassium, selenium, sodium, zinc)
- **Healthcare Professional Accounts**—health privacy security standards. Ability to view and edit patient nutrition targets, graph and print reports, restrict client accounts (i.e., limit access to calorie information for a patient with an eating disorder), find new clients, and become an affiliate. At time of print, \$24.95 billed monthly
- **Reports and charts**—ability to track changes in calories consumed and weight changes. Premium member features include weight and body fat, lipid panel, blood pressure + heart rate



MyFitnessPal

- with friends on the app. Healthcare providers can create an account on the app but do not have a special designation in the app
- **Food database tool** for determining nutritional content includes carbohydrates, fats (including grams of fat from polyunsaturated, monounsaturated, saturated, trans fats), cholesterol, sodium, potassium, carbohydrates, sugars, protein, vitamin A, vitamin C, calcium, iron
- **Exercise**—ability to input exercise by type and duration, synchronize data with wearable devices, and update nutritional needs accordingly
- **Report generation**—trends in weight, calories, exercise minutes, calories burned, macronutrients, fiber, micronutrients
- **Community forums**—members can create conversation threads or add friends on the app



Noom

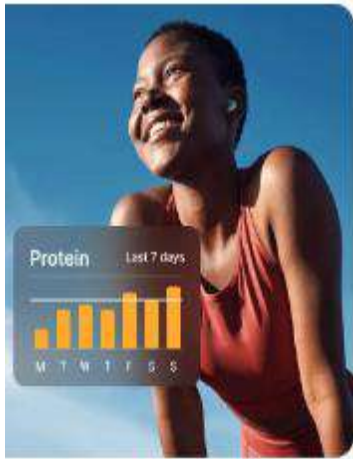
- **Use of psychology and behavior change** to implement weight loss—intake questions include screening questions for previous interventions tried, risk factors, motivation, and barriers. It includes daily articles and challenges, unlimited access to a personal coach approved by the National Consortium for Credentialing Health and Wellness Coaches, tools to track and monitor progress, support group of peers, biometric tracking including blood pressure and blood glucose). At time of writing, it costs \$59 per month
- **Research**—A 2016 retrospective cohort study of nearly 36,000 adults utilizing the NOOM app demonstrated weight loss among 77% of app user (mean duration of app use—267 days). Analyzed variables that contributed to weight loss include gender, baseline body mass index, weight input frequency, exercise, and dinner input frequency ($p < 0.001$)

NCCDB nutrition coordinating center food & nutrient database; CNF Canadian nutrient file; IFCDB Irish food composition database; NEVO Dutch food composition database; NUTTAB Australian food composition database

Mobile technology

- Track food intake
- Track activity

Welcome to
myfitnesspal



Ready for some wins?
Start tracking, it's easy!



Discover the impact of
your food and fitness



And make mindful eating
a habit for life



<https://www.myfitnesspal.com/en>

Will ChatGPT replace dietitians for diet counseling?

Our prompt:

Define the ideal diet for a person with type 2 diabetes.

ChatGPT answer:

The ideal diet for a person with type 2 diabetes should aim to regulate blood sugar levels and promote overall health. Here are some general guidelines to consider:

1. **Carbohydrate intake:** Carbohydrates can raise blood sugar levels, so it's important to monitor and control their intake. Complex carbohydrates, such as whole grains, vegetables, and fruits, are generally better choices than simple carbohydrates, such as white bread and sugary foods. Fiber-rich foods can also help regulate blood sugar levels.
2. **Protein intake:** Proteins are important for building and repairing tissues and maintaining muscle mass. Good sources of protein include lean meats, fish, beans, nuts, and low-fat dairy products.
3. **Fat intake:** While fat intake should be moderated, healthy fats, such as those found in nuts, seeds, and fish, can have beneficial effects on blood sugar and cholesterol levels.
4. **Portion control:** Eating smaller, more frequent meals throughout the day can help regulate blood sugar levels. It's also important to monitor portion sizes and avoid overeating.
5. **Avoid processed and sugary foods:** Processed and sugary foods can cause spikes in blood sugar levels and should be avoided as much as possible.
6. **Consult with a registered dietitian:** A registered dietitian can provide personalized recommendations and help design a meal plan that meets individual needs and preferences.
7. **Regular monitoring:** It's important for people with diabetes to monitor their blood sugar levels regularly to ensure that they are staying within their target range.

Remember, dietary changes alone may not be enough to control blood sugar levels, and medication or insulin may be necessary. It's important to work closely with a healthcare provider to develop an individualized plan for managing type 2 diabetes.

It can answer questions BUT it can give inaccurate answers & is not evidence based

Figure 1. ChatGPT answer about the ideal diet for patients/clients with type 2 diabetes (Version February 13, 2023).

AI can positively transform practice & patient care

- BUT it can be disruptive lead to
 - Consumer confusion
 - Consulting non-credentialled providers
 - Incomplete guidance despite plausible statements
 - Lack of sensitivity to economic, social, cultural, educational barriers in creating tailored advice to consumers
 - Missed opportunities for human communication
 - Patient misinformation
 - Privacy and data protection
 - Use of non-evidence based information

ChatGPT and Future Artificial Intelligence Chatbots: What may be the Influence on Credentialed Nutrition and Dietetics Practitioners?

DOI:<https://doi.org/10.1016/j.jand.2023.08.001>

Angeline Chatelan, PhD, MSc, RD; Aurélien Clerc, MSc, RD; Pierre-Alexandre Fonta, MSc Eng

Table. Potential opportunities and risks of using ChatGPT in nutrition and dietetics practice

Potential opportunities

For CNDPs^a:

- Obtaining a quick, 24/7 second opinion (if used advisedly)
- Brainstorming ideas (eg, research hypotheses, test questions, pedagogic objectives)
- Summarizing texts quickly
- Drafting texts with adaptable tone and no spelling mistakes (eg, e-mail, clinical notes, health promoting material, paper/grant abstracts)
- Increasing in-person time thanks to a reduced administrative workload
- Getting public recognition and being referred to more patients/clients, when ChatGPT warns about consulting a CNDP

For communities and patients/clients:

- Getting direct and interactive answers to questions about healthy eating, nutrition, dietetics, and diseases for free (for now)
- Gaining awareness of CNDPs as resources for nutrition and dietetics issues, when ChatGPT warns about consulting a CNDP
- Easing the planification of menus, which could be tailored according to personal needs (if specified in the prompts)

Potential risks

For everyone:

- Being unable to get relevant information if unable to correctly define issues, ask related questions, refine prompts, and evaluate the accuracy of answers
- Relying on made-up, unsourced, and outdated information
- Relying on incomplete or inaccurate summaries despite sounding plausible
- Spreading marketed, biased, or dubious information
- Drafting verbose, generic, repetitive, inaccurate, offensive, biased, or unoriginal texts, especially if not proof-read and edited
- Not respecting privacy and data protection (in submitted prompts)
- Depending on this technology, which may lead to a decrease in critical thinking and clinical judgment

For CNDPs:

- Missing opportunities for in-person contact and care because patients/clients rely only on artificial intelligence-generated advice

- Facilitating academic dishonesty

For communities and patients/clients:

- Referring to uncertified nutrition professionals if unaware of the difference between them and CNDPs, when ChatGPT warns about consulting a CNDP

^aCNDPs = credentialed nutrition and dietetics practitioners.



Artificial Intelligence in the Assessment and Management of Nutrition and Metabolism in Liver Disease

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Abstract

Purpose of Review Artificial Intelligence (AI) has the potential to transform detection and management of nutrition-related complications through advances in wearable technology, mobile applications, and machine learning. The literature, however, lacks studies specific to the interplay between AI and nutrition in patients with liver disease. The aim of this article is to address the current state of AI in nutrition and metabolic liver disease. We seek to understand how AI can be utilized to address gaps in the care of patients with liver disease, particularly as it relates to their nutrition.

Recent Findings Advances in AI, particularly in deep learning, have led to improved performance of diagnostic and prognostic models across many disease processes. AI-based systems in this realm include predictive modeling, natural language processing (NLP), and image recognition.

Summary Ultimately, large-scale studies are needed to validate the use of AI in assessing and improving nutrition in this population.

The potential applications from patient forums to passive dietary monitoring, nutrition assessment and diet calculations exist, scientific research is needed to create the disease specific applications

How do we move dietitians forward in these areas?

Directors may want the dietitians to change practices but do the dietitians want to?

Preparation for change may enhance outcomes.



Change is hard; Listen to practitioner perceptions with an open mind



Learners are the Stakeholders; engage them in wanting to change & learn



Tailor to the setting & the culture! Help them shift from “I have to” to “WOW I want to”



Provide coaching & a mentor

Potential Strategies to Overcome Challenges



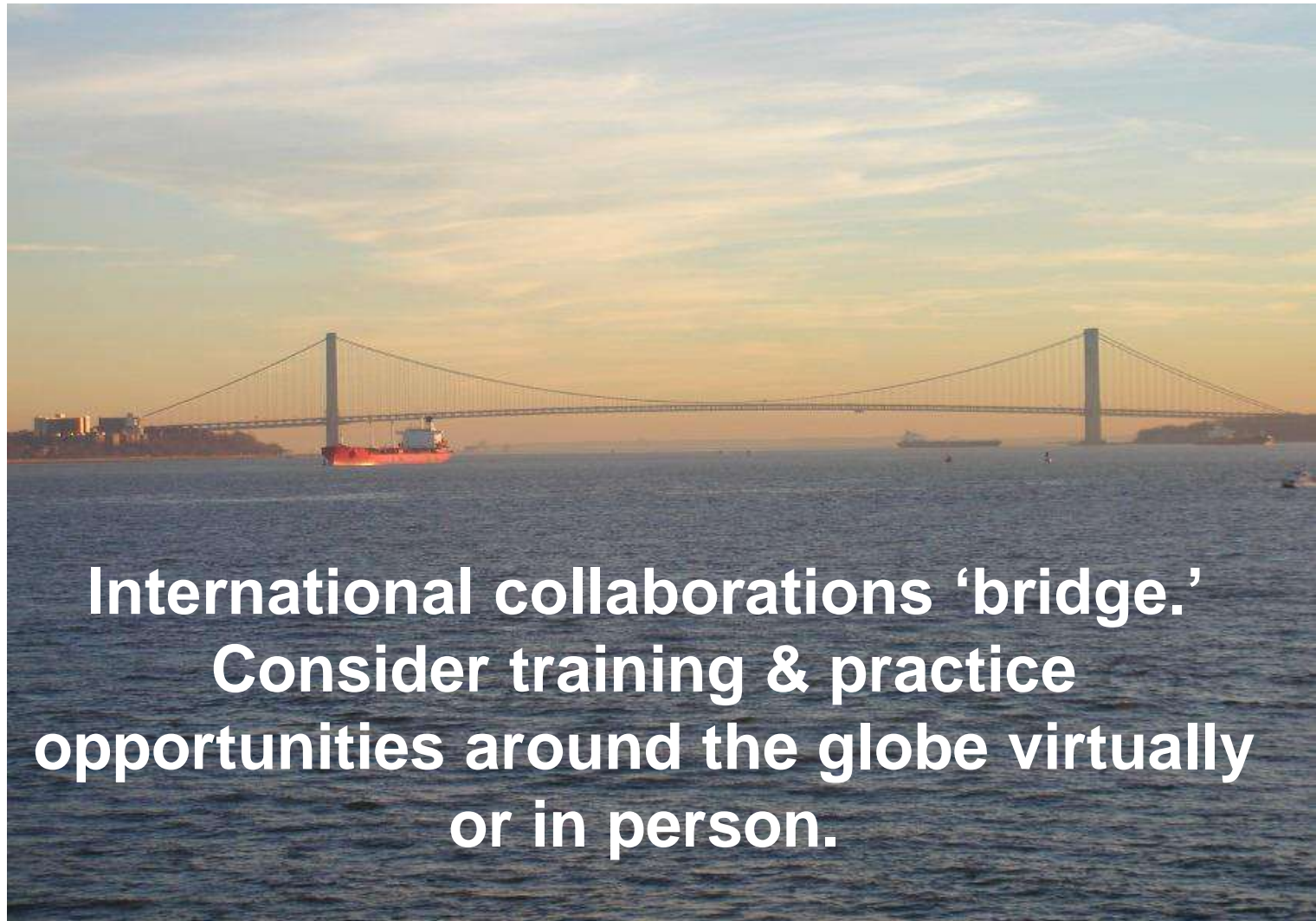
Facilitate knowledge development,
Provide training & coaching
Discuss obstacles & concerns

Closing Thoughts



**We need to “not go
where the path may
lead, go instead where
there is no path &
leave a trail”**

Ralph Waldo Emerson



**International collaborations 'bridge.'
Consider training & practice
opportunities around the globe virtually
or in person.**

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