Journal of Parenteral and Enteral Nutrition

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JPEN J Parenter Enteral Nutr 2010 34: 7S
DOI: 10.1177/0148607110375429

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Physicians Summit

Journal of Parenteral and Enteral Nutrition
Volume 34 Supplement 1
November 2010 7S-20S
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10.1177/0148607110375429
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What is the Significance of a Physician Shortage in Nutrition Medicine?

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Financial disclosure: *Dr. Merritt discloses that he is an employee of Abbott Laboratories.*

The practice of clinical nutrition is distributed across a wide spectrum of medical and surgical specialties. As a result, silos of nutrition activity tend to exist in isolation. Coincident with this process is a progressive shortage of physicians practicing nutrition medicine. Not surprisingly, physician membership in leading professional nutrition societies has been decreasing over the past 10 to 20 years. The number of physicians in the American Society for Parenteral and Enteral Nutrition in 2009 was barely one-third the number seen in 1990 (now <13% of the total membership). While The Obesity Society saw phenomenal growth this decade by more than 1,000 members (a nearly 70% increase), the number of physician members actually decreased by more than 100 (a 20% reduction in between the total membership). Two years ago, the number of physicians in the American Society for Nutrition fell to a range of between 100 to 150 members. The number of physicians sitting for board examinations in nutrition also decreased, such that over the past 4 years, only between 27 and 31 physicians have sat for 1 of 3 exams in clinical nutrition. This summit was convened to address the myriad issues that face the physician nutritionist and contribute to this shortage—issues related to education, board certification, research, and practice management. To correct this problem, and ultimately increase the number of physicians in the field of nutrition, Summit participants were charged with developing short term and long-term strategies with specific recommendations for change. A consortium or council for collaboration among professional nutrition and medical/surgical societies is needed to pursue these initiatives and foster ongoing communication among vested parties. (*JPEN J Parenter Enteral Nutr*. 2010;34:7S-20S)

Keywords: physician nutrition specialist; nutrition expert; nutrition support

An unfortunate aspect of clinical nutrition is that its practice is distributed widely over a variety of adult and pediatric medical and surgical subspecialties. As a result of this dispersion of resources, silos of nutrition activity have evolved in isolation from one another (Figure 1). Compounding this problem is a steady decline in the number of physicians who choose clinical nutrition as a career path. Working in isolation a with a small number of individuals means there is limited communication between groups, efforts are often redundant as 1 silo repeats the work done by another, and there is often a failure to reach critical mass on key issues. These problems create a situation where education, board certification, research, and clinical practice in nutrition are fragmented and limited in scope, a process that minimizes the impact of nutrition therapy on patient outcomes in the whole scheme of medical and surgical care. Efforts to break down the barriers between these silos of activity and to increase the fluidity, communication, and interaction among groups are required to prevent the extinction of the physician nutrition expert (PNE).

The Physician Nutrition Expert Shortage, held Summit December 2009 in Orlando, Florida, provided a unique opportunity to bring together nutrition leaders from

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Received for publication March 11, 2010; accepted for publication May 19, 2010.

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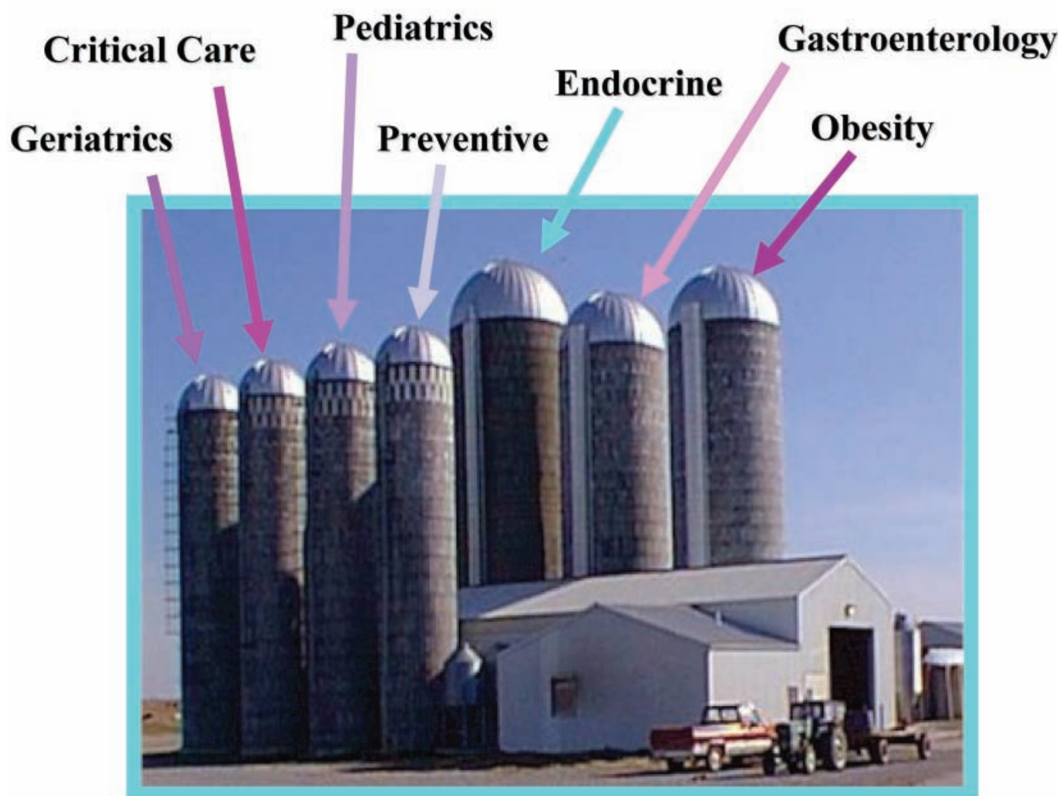

Figure 1. Silos of nutrition activity in medical and surgical subspecialties. Photograph reprinted with permission of Purdue University.

North America to evaluate the decreased number of physicians participating in clinical nutrition specialties. This Summit was organized by the convening society, the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.), and was sponsored by an unrestricted grant from the Abbott Nutrition Health Institute. The Summit represented an opportunity to evaluate the issues in education, practice management, research, and board certification that might be contributing to this physician shortage, and to develop strategies and initiatives for the future to correct the problem and enhance or promote the role of physicians in nutrition thereafter.

The specific objectives of the Summit were as follows:

1. To define the concept of a PNE and demonstrate how they provide solutions to specific clinical nutrition problems with improved outcomes.
2. To review the problems facing medical nutrition education of physicians.
3. To determine approaches for increasing PNE training and education, as well as promoting an improved culture of learning in the nutrition sciences.
4. To identify ways to increase the number of PNEs in North America and address the problems related to their shortage.
5. To provide a publication in the form of a supplement with a summary proposal in the *Journal of Parenteral and Enteral Nutrition* to guide this process.
6. To define an enduring structure, which would allow the pursuit of short-term and long-term strategies derived from this Summit.

While A.S.P.E.N. served as the convening society, a total of 17 other medical and surgical societies officially participated in the Summit. Appendix A lists these societies. Multidisciplinary representation was provided by nutrition leaders from the fields of dietetics, pharmacy, and nursing, who are also listed in Appendix A.

Define Target Audience

It is important to determine the proper nomenclature for the physician expert practicing clinical nutrition. Possible names would include PNE, nutrition specialist physician, medical or surgical nutritionist, or physician nutritionist. The term *physician nutrition specialist* (PNS) is a registered trademark and an official term developed by the American Board of Physician Nutrition Specialists (ABPNS). Whether to carry this name forward vs modifying the

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Table 1. Membership by year for the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)

Year	Total Member	Physicians	Dietitians	Pharmacists	Nurses	Other
1975–1977	100 ≥ 601	270	87	82	11	54
1977	745					
1978	1,714					
1979	1,779					
1980	1,982					
1981	2,006					
1982	3,065	1,069	907	572	305	33
1983	3,735	1,050	1,154	656	370	51
1984	4,118	1,167	1,182	711	482	54
1985	4,400	1,232	1,232	704	528	704
1986	4,121	1,142	1,238	653	500	34
1987	4,469	1,246	1,352	670	539	32
1988	4,803	1,324	1,383	711	527	57
1989	5,062	1,331	1,473	742	517	53
1990	7,300	1,752	2,628	1,679	949	292
1991	6,797	1,617	2,480	1,572	941	263
1992	7,259	1,655	2,859	1,756	927	296
1993	7,500	1,588	3,027	1,724	883	315
1994	7,814	1,586	3,190	1,622	755	313
1995	6,507	1,355	2,834	1,278	586	405
1996	6,768	1,410	3,220	1,207	515	289
1997	6,643	1,384	3,407	1,246	479	271
1998	5,992	1,330	3,065	1,051	362	253
1999	5,534	1,079	2,868	887	348	352
2000	5,400	1,079	2,841	828	292	360
2001	4,409	841	2,472	592	201	161
2002	4,643	838	2,693	630	195	160
2003	4,804	823	2,890	673	186	232
2004	4,693	773	2,841	678	169	232
2005–2006	4,819	747	3,022	604	186	260
2006–2007	4,948	735	3,176	622	185	229
2007–2008	5,022	707	3,250	656	176	233
2008–2009	4,861	634	3,149	608	166	304

term to reflect changes in board certification that may be determined over the course of the Summit will be an important outcome parameter from the meeting. The physician practicing in these circumstances might have variable areas of expertise ranging from nutrition and metabolism to obesity and health promotion or wellness.

One of the papers to follow, authored by Kushner et al, will carefully define the PNE. Qualifying characteristics associated with such an individual need to be determined to differentiate them from those with an incomplete knowledge base in clinical nutrition (so-called dabblers) or even those with competency but not true expertise. Candidate qualifications may include an extensive fund of knowledge as documented by a rigorous board certification process, demonstrated expertise in the techniques of enteral nutrition (EN) and parenteral nutrition (PN) formulation and access, documented leadership in nutrition-related societies, service and leadership on a multidisciplinary nutrition team (MNT), teaching experience in clinical nutrition, and/or relevant research experience. Such an expert in clinical nutrition should spend a specified amount of clinical time, teaching time, and/or research activity in clinical nutrition, with the precise amount to be determined.

As mentioned above in defining the PNE, it is important to differentiate between competence and expertise. Competence refers to exposure to a basic nutrition education, enabling the physician to perform a nutrition assessment, provide nutrition therapy to his own patients, and perform adequately on a formal specialty or subspecialty examination with regard to questions on clinical nutrition. This level of knowledge should be differentiated from expertise, which would be defined by a fund of knowledge and would qualify a physician to sit for a nutrition board certification exam, to serve as a mentor for the nutrition education of others, or to serve as a director for an MNT providing consultative services for nutrition therapy to other physician groups. Expertise is

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Table 2. Membership by Year for The Obesity Society

Year	Total Members	Medical Doctors (%)
2004	1,457	638 (44%)
2005	1,789	705 (39%)
2006	1,877	714 (38%)
2007	1,867	690 (37%)
2008	2,371	663 (28%)
2009	2,459	598 (24%)

conferred by exposure to virtually all aspects of clinical nutrition, and hence, the priority shifts from an emphasis on board certification to the training process itself.

Statement of the Problem

The issues that initiated the organization of this Summit included the problem of decreasing physician membership in national nutrition societies and decreasing a number of physicians taking nutrition board certification exams.

Review of membership data from A.S.P.E.N. dating back to its inception in 1975 (Table 1) shows that the number of physician members in A.S.P.E.N. peaked in 1990 at 1,752 physicians. Over the past 2 decades, this number has steadily decrease with a major drop in membership in 1999 (from 1,330 to 1,079) and again in 2001 (from 1,079 to 841). This number has continued to decline such that over the past year, there were only 634 physicians remaining in A.S.P.E.N. (13% of the total membership). This occurred over a time when the total number of members in A.S.P.E.N. was unchanging (Table 1). A decreasing number of physicians were seen in membership for the American Society for Nutrition (ASN) and The Obesity Society (TOS). Records for TOS over the past 6 years (Table 2) show that while the overall society membership increased by more than 1,000 (a nearly 70% increase from 1,457 in 2004 to 2,459 in 2009), there was a paradoxical decrease in physician numbers by more than 100 (from 714 in 2006 to 598 in 2009). Physicians now compose only 24% of TOS membership. The exact numbers for ASN were difficult to obtain due to the recent merger of 3 previous societies (the American Society for Nutritional Sciences, the American Society for Clinical Nutrition [ASCN], and the Society for International Nutrition Research). Pinpointing historical physician member enrollments for ASN is challenging due to the absorption of the clinical division between 2005 and 2006, after which many physician members hips lapsed. Nonetheless, the fact remains that over the past 10 years, ASN experienced a net physician membership loss, reaching a nadir in 2006 of only 100 to 150 physician members. Aggressive acquisition and retention efforts succeeded in raising that number to 374 physician members in 2009, representing 9.3% of the total ASN membership of 3,800. Only the American College of Nutrition (ACN) retained a somewhat stable in physician membership over the past decade, although the central office could not provide exact numbers. In 2009, there were 1,150 total ACN members, of which approximately 45% were physicians (this last number thought to be relatively constant, plus or minus 1% to 2% over the past 10 years).

A similar phenomenon has been noted in the number of physicians taking board certification exams in clinical nutrition over the past decade (Table 3). The ABPNS initiated their exam in November 2001. An increase in the number of physicians taking the exam was seen by November 2004, at 55 physicians, and then a dramatic jump in November 2005, to 135, the last year for which physicians were grandfathered in to take the exam with no formal nutrition training. After that year, the number of physicians taking the exam dropped off significantly (Table 3). The A.S.P.E.N. certification exam provided by the National Board of Nutrition Support Certification (NBNSC) initiated their exam in 1984. Numbers peaked in 2004, when 23 physicians took the exam. While initially providing a separate exam for the 4 disciplines (dietetics, pharmacy, nursing, and physicians), board went to 1 unified exam 2 years ago. Numbers have been decreasing over the past 5 years to about half the peak seen in 2004. A similar situation has been experienced with the exam provided by the ACN. The ACN introduced their exam, the Certification Board for Nutrition Specialists (CBNS), in 1993. The number of CBNS physician examinees peaked at 41 in 2003, and decreased to ≤5 for the last 3 years. Overall, since 2006, only between 27 and 31 physicians annually take 1 of the 3 nutrition board examinations. In the fall 2010, TOS expects to introduce their certification exam for obesity medicine, which will be the fourth nutrition-related board examination for physicians.

Evidence from the literature provides further confirmation of this physician shortage, indicating that a diminished PNE presence has been noticeable at academic medical centers across the country. As part of a 2007 survey by the American Gastroenterological Association (AGA), 46 gastroenterology fellows participating in a weekend course in clinical nutrition were surveyed as to the presence of a PNE, the quality of their education, and the existence of a nutrition program at their home institution.[1] Only 43% of respondents indicated that there was a staff physician at their institution recognized as a PNE. When asked about the existence of a specific nutrition rotation, 30% indicated the existence of an inpatient nutrition rotation, 13% reported an outpatient nutrition rotation, and 7% indicated the presence of an outpatient obesity clinic.[1] With regard to the content of the academic core curriculum in their gastroenterology fellowship programs, a lecture series in nutrition had been given at the institutions

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Table 3. Number of Physicians Taking Nutrition Board Examinations by Year (% Passed)

Year	ABPNS	NBNSC	ACN[a]
2000	N/A	14 (43%)	10 (97%)
2001	19 (95%)	17 (53%)	13 (98%)
2002	23 (74%)	23 (78%)	33 (96%)
2003	21 (67%)	11 (45%)	41 (99%)
2004	55 (75%)	23 (43%)	10 (96%)
2005	135 (73%)	22 (41%)	16 (98%)
2006	21 (81%)	22 (64%)	8 (95%)
2007	5 (80%)	17 (41%)	5 (95%)
2008	13 (85%)	12 (100%)	3 (97%)
2009	11 (82%)	13 (85%)	5 (95%)

ABPNS, American Board of Physician Nutrition Specialists; Certification; ACN, American College of Nutrition; N/A, not applicabale; NBNSC, National Board of Nutrition Support.
[a]Indicates overall pass rate.

Table 4. Dissatisfaction with Programming at National Nutrition Meetings[a]

Group	Depth + Scope C/W Learning Needs	Personal/ Professional/Career Goals Met
Nurse practitioner	4.00	4.00
Dietitian	3.37	3.40
Registered nurse	3.37	3.48
Pharmacist	3.30	3.41
MD	3.08	3.18
PhD	3.00	3.00

[a]Number represents mean satisfaction scores on a scale from 1 (worst) to 4 (best) in response to a 2008 American Society for Parenteral and Enteral Nutrition Survey given at Clinical Nutrition Week.

of 41% of the respondents, while lecture series in obesity were given in 26%.[1] When asked about long-term goals, 4% of these fellows, who were electively attending a course in nutrition, indicated they would consider an additional year of formal training in nutrition. Only 30% indicated plans to pursue a career in gastrointestinal (GI) nutrition[1].

Further evidence of the physician shortage in the literature is demonstrated by reports of the diminished presence of a PNE on MNTs at both academic and community-based medical centers across the country. A practice management task force convened by A.S.P.E.N. performed a survey in 2008, to which there were 698 respondents.[2] Respondents indicated that an intact MNT was present in 42% of centers. An MNT was more likely to be present in a university center than a community hospital (63% vs 28%, respectively).[2] A PNE was part of the designated MNT 72% of the time. One-third of those designated MNT physicians were board certified in nutrition (36%). Of those physicians participating in MNT activities, <25% of their time was spent on clinical nutrition.[2] The specialty of the participating PNE was gastroenterology for 31% of the MNTs, surgery in 28%, and critical care 15%. Another 12% in comprised general medicine, specialists, or endocrinologists. Overall, 43% of intact MNT's indicated that a PNE was the leader of their team.[2]

Physician attendance at national nutrition meetings has been poor over the past decade, and there is evidence that physicians are often dissatisfied with the level of programming. An A.S.P.E.N. survey in 2008 at the completion of Clinical Nutrition Week (CNW) indicated that physicians and PhDs were the least satisfied with the programming when it came to the depth and scope of their learning needs and meeting their personal, professional, and career goals (Table 4).

Why Is It Important to Increase the Number of Physician Experts?

What is the evidence that the presence of a PNE is needed or even wanted in medical education in North America? In 1990, the U.S. Congress passed the National Nutrition Monitoring and Related Research Act, which stated that "students enrolled in United States medical schools and physicians practicing in the U.S. should have access to training in the field of nutrition."[3] In a study performed 1 year later, Weinsier et al indicated that the single most important feature of a "strong nutrition program" was the presence of a PNE.[4] A 1995 ASCN report indicated that every medical center should have at least 1 PNE.[5] The report indicated that the PNE was required if "effective nutrition education" was to be given to medical students, fellows, and residents. The report went on to indicate that the most important strategy to promote clinical nutrition was for every medical center to identify a specific faculty member who could serve as a role model for the academic physician committed to a career in nutrition.[5]

Unfortunately, <25% of U.S. medical schools require instruction in nutrition.[6] Half of these schools offer only an elective in clinical nutrition, and records indicate that <6% of students enroll in such an elective.[6] A 1990 survey of U.S. residency programs by Boker et al indicated that the presence of a PNE was 1 of 8 critical components required for effective nutrition training. Unfortunately, a PNE was present in only 17% of residency programs, despite the fact that 63% of program directors thought nutrition was an important field.[7]

In the absence of the strong presence of a PNE, little has changed in medical education over the past 2 decades.

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A survey of nutrition education in U.S. medical schools was performed by the National Academy of Sciences (NAS) in 1985.[8] At the time, the NAS recommended that 25 hours of class time be devoted to clinical nutrition. The survey results indicated that 27% of schools required a separate nutrition course and that a mean 21 hours of class time were devoted to the topic.[8] More than 20 years later, Adams et al repeated the survey and found that little had changed.[9] Remarkably, still only 30% of schools required a separate course in nutrition.[9] By 2006, the NAS had increased their recommendation for class time devoted to nutrition to between 37 and 44 hours, yet the survey results indicated that a mean 23.9 hours were actually provided.[9] Of the nutrition programming that was provided, more than 75% occurred in the first 2 years through the basic science courses (such as biochemistry).[9] Students often failed to identify the information as representing clinical nutrition. With so few PNEs at medical centers across the country, very little nutrition was provided in the clinical years.

But even more importantly, is there evidence that the practice of clinical nutrition in the United States is diminished by the shortage of PNEs, or that patient care suffers as a result? An international survey performed by the Canadian Critical Care Nutrition group indicated that the practice of critical care nutrition in the United States is sub standard.[10] In 2008, the Canadian group (headed by Daren Heyland) surveyed 179 intensive care units (ICUs) around the world.[10] As part of the study, ICUs were requested to fill out clinical information on 20 patients, and then were ranked on the adequacy of their proficiency of nutrition support based on 6 criteria. Criteria involved the adequacy of provision of enteral feeding as a percentage of caloric requirements, the percentage of patients receiving EN, and the percentage of patients for whom EN was initiated within 48 hours. The other 3 criteria included patients with a high gastric residual volume who were placed on promotility agents, patients with high gastric residual volume who were placed on small bowel feeding, and how many times serum glucose levels were >10 mmol/L. In an analysis of variance, the efficacy of critical care nutrition provided was shown to correlate significantly with geographic location.[10] When the ICUs were ranked, centers located in Europe, South Africa, Australia, New Zealand, Canada, and Latin America scored much higher than sites in the United States and China. In fact, of the bottom 10 ICUs, 7 were from the United States Comparing the practice of those ICUs in the top 10 of the ranking system to those in the bottom 10, adequacy of EN as a percentage of goal calories was higher in the top group vs the bottom group at 54.7% vs 35.3%, percentage of patients receiving EN at 98.6% vs 85.3%, and percentage of patients placed on EN within 48 hours at 87.9% vs 43.7%, respectively.[10]

What Is the Role of the PNE With Current Public Policy Issues?

Several public policy issues are developing over the next few years that may affect the need or role for the PNE. A shift from "fee for service" to "pay for performance" reimbursement (patient-centered care) may change the overall need and designation for PNEs. The Centers for Medicare and Medicaid Services (CMS) recently identified candidate conditions such as nosocomial infection and pressure sores that when developed during hospitalization may jeopardize insurance reimbursement for submitted care charges. A candidate condition of nosocomial malnutrition was identified by CMS but has been put on hold. Government regulations in the future, which may affect reimbursement, conceivably might require an intact MNT with documented physician leadership.

Marketing Nutrition in the United States and North America

A number of factors may raise public awareness for clinical nutrition in North America in the near future. The first U.S. nutritionDay was held on November 5, 2009, and was led by Gail Gewirtz, MS, RD. Similar to the results of previous nutritionDays held in Europe, public awareness and media exposure have raised the issue of nutrition therapy in hospitalized patients and the need for the nutrition experts.

Another factor could drive increased need for that PNEs in the future would be the completion of a large prospective randomized trial of early (within 72 hours), plus adequate (at least 50% of energy and 1 g protein/kg), nutrition by the enteral route, parenteral route, or a combination of the 2, compared with usual nutrition support in critically ill patients. At least 4 trials in Europe, Australia, and North America (Canada) are being conducted to address this question. Depending on the outcomes observed, completion of such trials (especially if one was performed in the United States) might pull physicians into clinical nutrition. The heightened level of evidence in the literature for the value of nutrition support would increase demand for PNEs. Such trials would increase the likelihood for additional federal funding in nutrition research. If positive results were seen in these trials, the Joint Commission conceivably might mandate the provision of better nutrition support for payment and accreditation, respectively.

Recommendations

The most important goal of the Summit is to increase the number of identified PNEs. The formal metric for this

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endpoint is defined by that individual who would choose nutrition as a subspecialty for a substantial part of their career, have the skills and expertise to direct a MNT, perform research in a nutrition-related field with published results, serve as a mentor at an institution to promote nutrition education, and provide clinical nutrition services for other physicians. While each paper in this supplement will provide very specific recommendations for initiatives to promote change in education, training, research, and practice management, a number of important recommendations should be made based on this discussion.

Increase Physician Membership in Nutrition-Related Societies

A specific goal of the Summit would be to increase physician membership in nutrition-related societies. If the initiatives derived from this Summit are successful, then the numbers of physician members in the following societies: A.S.P.E.N., TOS, ACN, ASN, and the Canadian Society for Clinical Nutrition should increase over the next few years. For the American nutrition societies, an appropriate metric or goal would be to double the number of physician memberships over the next 5 years. Based on 2009 membership rosters, the metric for increase of physician memberships for each society by the year 2015 would be as follows:

A.S.P.E.N.: 634 → 1,200 total
ASN: 411 → 800 total
TOS: 598 → 1,200 total
ACN: 517 → 1,000 total

A number of strategies might be developed to drive membership. To optimize chances for increased numbers across the board, any ideas or strategies developed by any one of the nutrition societies should be widely shared with the other groups. Programs should be defined to attract international members, such as discounted membership fees that offer the society's journal only in electronic format (e-journal). Strategies need to focus on attracting trainees. Again, discounted membership fees are appropriate for students, residents, and fellows who have reduced training salaries. Those same trainees appreciate reduced "just out of training" fees, discounted for the first 1 to 2 years after entering practice. Such programs often promote long-term allegiance to a professional society. Travel funding to the national nutrition meetings and awards in the form of free membership to a nutrition society may be offered by local MNTs, academic institutions, state society chapters, or physician sections within the national society. Membership programs always need to advertise the direct benefits of joining the society to new potential members (such as the society's journal, access to restricted areas for educational material on the society's Web site, discounted registration at state and national meetings, etc). But nonmember colleagues who demonstrate career interest in nutrition need to be challenged to join the nutrition societies by the leadership of our academic centers and state and national nutrition societies. The challenge to join a nutrition society is based on a need to support the programs of that society (which in turn provides a service to its members), advance the science of nutrition, and help develop and train the next generation nutrition care providers. Current members could be offered discounts on their membership fees for the effective recruitment of a certain number of new members. Programs should be in place to retain current members in the nutrition societies. A senior fellowship program is a valuable means of identifying leaders, confirming status for accomplished careers, and showing appreciation for years of dedicated work for a society. Both the ACN and the ASN have fellowship programs. In additionally, ASN maintains an emeritus membership as an honorary category bestowed on senior members and leaders. Such programs should tend to retain their leaders, even if the respective career paths of those individuals change over the years. Programs could boost recruitment of new members by promoting coordination between nutrition societies. Block memberships may be offered wherein an individual pays a reduced membership fee for 2 nutrition societies when joining both at the same time. Or members of 1 society are offered a reduced membership fee for joining a second partner nutrition society, such as has been established between A.S.P.E.N. and the European Society for Clinical Nutrition and Metabolism (ESPEN).

Increase the Number of Physicians Who Take Nutrition Boards Each Year

An important goal of the Summit would be to increase the number of physicians who take the nutrition boards each year. One of the later papers in this supplement authored by Apovian and others will discuss board certification and the formation of a modular board with subspecialty interest modules. Within a year, the following 4 separate boards will offer a nutrition-related examination for physicians: NBNSC, ABPNS, ACN, and TOS. An important endpoint of this Summit will be to determine the feasibility of having 1 overall nutrition-related subspecialty certification board under the auspices of the American Board of Medical Specialties (ABMS), or at least an umbrella certification process where by some proportion of these boards would participate in a core examination and optional subspecialty modules.

The most important metric or goal of this process would be to increase the number of physicians who take nutrition-related exams to morethan 200 physicians per year. This is the number of physicians per year taking an

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ABMS-required in order to become board-certified exam status in a medical or surgical subspecialty. For the past decade, an average 40 physicians annually sit for 1 of the 3 nutrition-related exams offered by the ABPNS, NBNSC, and ACN (excluding the 2 years where the numbers for ABPNS increased before the end of a grandfathering period). Since 2000, the average number of new physicians taking each exam are as follows:

ABPNS: 16.3 physicians per year
(excluding 2004 and 2005)
NBNSC: 17.4 physicians per year
ACN: 7.4 physicians per year

Even if the 3 existing boards were joined under 1 umbrella organization, the number of applicants who sit for the boards each year would have to increase 5-fold to reach the goal of 200 physicians per year set by the ABMS. In fall 2010, TOS will introduce its exam in obesity medicine. Applicants will have a 5-year grace period during which they will be grandfathered in and allowed to sit for the exam before formal training is required. At the present time, there is only 1 training program in obesity medicine (Lee Kaplan, MD, training director, at Massachusetts General Hospital, Harvard Medical School) with 1 available position per year.

A number of strategies could be developed for increasing the number of physicians who take nutrition-related boards each year. The best option would be to consolidate some or all of these boards. NBNSC and ABPNS use the same examination consulting group, professional testing corporation, and work with the same executive staff person from that organization. Another option would be to share the question bank between examination boards. A number of the same people who are on the ABPNS board making questions for that exam are also on the TOS board making questions for their upcoming obesity exam. Are the authors of the TOS exam questions required to start over (or could they share questions they have already written for the other society's exam)? When the NBNSC board decided to switch to 1 exam for all 4 disciplines, they withdrew several of the questions designed specifically for physicians. The common testing organization for the 2 boards suggested that ABPNS ask to use those discarded questions for the ABPNS exam. To help physicians prepare for such exams, educational preparation materials need to be developed. In internal medicine, the Medical Knowledge Self-Assessment Program is a set of well-written condensed booklets with sample questions designed to prepare candidates for the American Board of Internal Medicine exam. No such materials exist to prepare for nutrition exams. Nutrition leaders and mentors need to push trainees to sit for the nutrition boards. Fellows or residents who have shown an interest in nutrition, who have been properly mentored, who have received appropriate training, and those who to take qualify for any other reason nutrition board, should be strongly encouraged to follow through and actually take those sit for the exams. Encouraging our colleagues within the community of our nutrition experts (many of whom are not board certified) to step forward and formally sit for their boards in nutrition is an important strategy as well.

Improve the Quality of Programming at National Nutrition Meetings

A goal to improve the quality of programming at national nutrition meetings is important. When physicians attend national nutrition meetings, they want to be challenged. Obtaining the best available for speakers, who represent the key opinion leaders, researchers, and international leaders in clinical nutrition, is important to ensure top-quality programming. Increased funding for honoraria and expenses are required to secure the attendance of these speakers. Blending basic research with the clinical arena helps break down these silos of nutrition activity, allowing both groups to benefit from their interaction.

There are several innovative ways to incorporate such a strategy. At the national meeting Digestive Disease Week (DDW), basic research and clinical medicine are mixed in a format called a topic forum. Three or 4 abstracts on a similar topic are presented, which are then followed by a state-of-the-art lecture by a renowned clinical expert (who ties everything together). At CNW, top abstracts are incorporated into a clinical symposium where they best fit. Two or 3 clinical talks are presented, with a basic science talk in the middle. When done well, a very popular symposium results, as the topics are weaved together with academic muscle provided by the basic science and the practice implications inferred by the clinical presentations. Another strategy involves taking the best ideas from 1 society meeting and incorporating them into another. With various meetings spread throughout the year (A.S.P.E.N. in February, the American Association of Clinical Enocrinologists and ASN in April, and TOS in November), there is no reason there could not be communication between groups, figuring out what were the hot issues at 1 meeting and saving space for them at a subsequent meeting.

The timing of programming can be communicated from 1 society to the next. A.S.P.E.N. is developing a collaboration with ESPEN such that 15 months before A.S.P.E.N.'s CNW, the planning committee will develop themes for the meeting and send those ideas to ESPEN. When the planning committee convenes for their formal meeting 11 months before CNW, ESPEN has already had the opportunity to submit the names of their experts on these different topics for incorporation into the CNW

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meeting. Or, ESPEN might have the chance of putting in their own proposal for an entire symposium. Scheduling a symposium titled "late-breaking topics" allows planning committees to bring in these ideas from outside groups and incorporate them at a very late time. Opening lines of communication facilitates the sharing of ideas, studies, and investigators between these societies. Also important is an effort to retain the recognized stars, making sure that the well-respected, seasoned experts have a presence by making them discussants, moderators, or panelists. It is important to put senior people on the planning committee, as these are the individuals with connections who can call their friends and expert colleagues and entice them to participate in the meeting.

Increase Nutrition Programming Outside Nutrition

An other important goal might be to introduce or request collaboration for nutrition programming at national meetings for medical and surgical societies that are outside nutrition, such as DDW for gastroenterologists and GI surgeons, the American College of Surgeons national meeting, or the national meeting for the AACE. Some societies such as the Society of Critical Care Medicine or the AGA have already shown significant interest in clinical nutrition and routinely include some nutrition programming in the schedule of their national meetings. Formalizing this process by requesting a spot on their planning boards is one way to take advantage of their budding interests. Another strategy would be to partner with industry to provide breakfast symposia, dinner meetings, or luncheons with the experts at meetings for these outside medical and surgical societies. Such programs, which include a meal, bring in top-quality speakers, and incur no added expense to host societies, are very popular with planners and attendees.

Conclusion

This Shortage Summit Physician Nutrition Expert provides a truly unique opportunity to change the paradigm of education, practice management, and board certification for physicians involved in clinical nutrition. Several aspects of this proposal should serve to achieve success where earlier attempts have failed. The Summit was designed to be all-inclusive, involving thought leaders across the entire spectrum of nutrition medicine. The process is multisocietal and multispecialty in orientation, which should help avoid political conflicts. The Summit seeks to build a process that is based not on certification-driven incentives or purely academic motivations, but on practical issues such as fixing the economic barriers to reimbursement, developing standardized training programs, marketing the practice of nutrition medicine, and promoting the growth of its participating societies. Unless the efforts of this Summit are successful, the current trends going unaltered might render the PNE extinct.

The organization of the Summit is arranged around topics ranging from definition and identification of the PNE, education through multiple levels of medical school, residency, and fellowship, to practice management issues, research, board certification, and possible centers of excellence in nutrition. The Summit speakers are charged with identifying problems and dissecting arguments for and against critical issues. Discussion both during and after the Summit will move toward a consensus on the most important issues, with the development of very specific, achievable, strategic endpoints. Each talk, with its discussion, is published in this supplement, with a consensus paper summarizing the specific initiatives and recommendations derived from the discussions. The strategy for ongoing structure or framework by which to pursue these initiatives and promote collaboration between participant societies will be determined as one of the endpoints of this endeavor.

Discussion

Dr. Graham: I'm a gastroenterologist from the University of Pittsburgh. We have a huge GI fellowship program, with 18 fellows. We have had, over the course of the last 5 years, 3 fellows who have gotten interested in nutrition. None of the 3 are pursuing nutrition as a career. They did, however, do some very specialized research. We have a very active group in nutrition endoscopy, and they have become very skilled in that area. However, to continue forward, we have to face the problem of how to make nutrition have pizzazz, not only for the gastroenterologist (who is under pressure to do procedures and generate revenue), but for other specialties as well. What do we do to create pizzazz for nutrition?

I would be remiss if I did not comment that there's an elephant in the room that needs to be commented about, and that is that nutrition doesn't pay. I've been in the nutrition gastroenterology business since 1992, and I'm getting tired of trying to justify my existence. So my hope is that we will have some answers to the issue of what do we do to provide some pizzazz to the specialty of nutrition and to generate revenue at the same time.

Dr. Hegazi: We should have a specialized nutrition residency that attracts the young medical students once they graduate. They may be trained in different silos or medical specialty areas, then leave these silos or whatever association they have, for some advanced kind of nutrition training.

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Dr. Jensen: The first thing I would make a plea for is specifically that we need to bring focus to some realistic obtainable short- and long-term goals. There are a lot of pie-in-the-sky things that we can think about. But in light of the evolving healthcare economy and changes in the practice of healthcare, I think we also need to bring some focus and realism to this discussion.

I also want to share a little bit of history that some of you are intimately acquainted with, and others are not. Not that long ago, we actually came quite close to becoming a certified subspecialty of medicine just like geriatrics. The specific concerns that precluded us from gaining approval were as follows: one was the absence of standardized training programs; two was the absence of any uniform accepted certification process; and three was the inadequate number of physicians taking these training programs and the certification examinations. I would suggest that compared to 15 years ago, we are actually less prepared today to address these concerns.

The truth of the matter is there are currently fewer legitimate nutrition-training programs available for physicians. Our certification processes are highly disparate. We have very small numbers of people taking these certification exams. So in regard to the key question from the last presentation, is there a need for enhancement of PNEs or PNSs? I think the answer is an emphatic yes. I think that it is also clear that we have an abundant amount of work to do.

Dr. Merritt: I was present at the American Clinical Board of Nutrition when we lost that vote. In recent years, the ABPNS has spent hours and hours of discussion on how best to expand the number of nutritionists getting certified annually. And a developing approach has been to increasingly modularize the exam to expand its appeal to people working in a variety of medical areas.

Sometimes it's helpful to get all the information together in one place about a very complex problem, and one way of doing that is to ask a series of questions about what's working, what's not working yet, what's missing, and what's possible. Some of the critical items in those categories that strike me are as follows:

What's working? We do have a small group of savvy experts. We have some highly functional nutrition support teams who provide very effective medical nutrition therapy.

What's missing? We don't have a broadly accepted definition for the physician nutritionist. The issue of reimbursement has already been made, but I don't see a lot of trainee demand for physician nutrition training programs.

What's not working? We don't have any kind of formal structured professional recognition and reward for physicians who choose nutrition as a career, and we may not even have the motivation of future trainees. That may actually be a major failing to date.

What's possible? We all dream of improved patient care, a coordinated effort of nutrition-relevant professional societies to improve nutrition care, physician nutrition education, and physician board recognition, and in that regard, it's important that we have people from so many different organizations here at this Summit. And it may be possible to have nutritionally savvy leadership in medical schools and in broader professional organizations who can represent the interests of nutrition beyond the nutrition community. I think we tend to be a bit internally focused.

I have always identified myself primarily as a practicing physician nutritionist, and I'm starting to think that's both a luxury and a mistake. Given the reality of the people in the room, I would assume fact that you're not going to come to me for advice on adult heart disease (because I am a pediatrician), and I'm probably not going to go to Heimburger here for advice on how to manage a premature baby (because he is an internal medicine specialist for adults). Maybe it's not realistic to think of ourselves as a primary specialty, but rather as some special interest group that comes together from a broad variety of other medical and surgical specialties. We have a series of priorities that have to be identified, because there are only so many people, so many resources, and so much time to allocate to the process. We have to improve nutrition education in medical school, motivate students, train specialists, upgrade nutrition care, and expand the research basis for nutrition therapy. Perhaps by answering some of these questions, we may get a little different answer on what numbers are needed to accomplish the task.

Dr. Van Way: I go back a long way. I work in a hospital, which has a nutrition support team. I'm 1 of 2 physicians who staff that team, so I've got a little bit of expertise in this area. I've never sat for any kind of nutrition board. Do you know why? The reason is that the boards, the certification process, have been a mess. Now I'm looking at this from the standpoint of someone who already has 3 boards. I'm boarded in thoracic surgery, surgery, and critical care. Somebody's got to show me that this exam is a meaningful credential before I'm going to take another exam.

So, I issue this challenge: Everybody here who has been involved in the certification process should give us something that is meaningful. Give us a real certification. I don't care what kind of training we have. I don't care about the ABMS. What I care about is whether there's 1 certification that all people in the nutrition field will recognize as the certification for an expert in this area. We need to settle on 1 type of certification and then go out and try to sell it.

Dr. Cowan: I'm calling for a paradigm shift. I recommend that we all change the name, as a rallying central entity. We should try not to be nutritionists with triple names (like metabolism, obesity, and health promotion) or PNEs. We should do what was successfully done down in Brazil, where all of the nutritionist physicians, and only them, are called nutriologists. And what do they practice? Nutriology. That is a specialty—nutriologists/nutriology.

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Dr. McClave: We want to end up with more people with a big "N" on their chest for nutrition. Does that mean they have to have a board? Does that just mean they have to be knowledgeable? Does that mean they just have to have a charismatic effect or a watershed effect on the people around them? What defines having an "N" on your chest that we can point to and say, "He can provide the nutrition care for these patients. He can raise the playing field for the group with regard to nutrition therapy."

Dr. Mechanick: Remember, we don't need the answer at this point. Right now, what we have to do is come up with the correct questions that we can address and focus on.

Dr. Ziegler: Nutrition is hot, super-hot. The general public is really interested in learning about nutrition, not just physicians. You even hear President Obama and persons in the media say we need to give people more access to nutritionists. They are focused more on prevention. But I think that nutrition as a discipline, not just physicians doing nutrition, but nutrition, as a part of a health professional discipline, is really hot. So somehow we've got to figure out how to take advantage of that.

I disagree with the concept of the nutriologist. Nutrition is a double-edged sword. The good thing about it is that it's extremely integrated. Any discipline should have an aspect of nutrition as a part of it, because nutrition cuts across medical and surgical specialties in so many ways. The downside is that it's totally diffuse. Nutrition is all over the place, and so it doesn't have a home.

But I don't think anybody comes out of medical school and then starts practicing as a nutritionist. We all have a primary discipline. We are either pediatric surgeons, trauma surgeons, or family practitioners, etc. I don't think we should try to pigeon hole nutrition into "this is what you must be." We need to take advantage of the fact that we're diffuse, the discipline is diffuse, and yet we all have an interest in this concept that nutrients are important for health. So I would argue that we should maybe make nutrition broader. We have a lot of people who are interested in this area, but there's not a lot of expertise.

The 4 major nutrition-related societies don't really compete with each other. TOS has obesity, A.S.P.E.N. has PN and EN therapy, ASN is broader with PhD researchers and international nutritionists, and ACN seems to have a lot of focus on micronutrients. So this concept of joining as one is important—having the societies separate but equal, maintaining their own identity yet collaborating in a consortium. I love the idea that you might get a discount if you join 2 societies at the same time (ASN and A.S.P.E.N., or TOS and ACN).

Dr. Seidner: The next thing we need to do is somewhat of a paradigm shift. We need to have a consortium of the societies, not just 4 societies, but maybe 10 or 20. Societies need to get together and do several things. First, they need to point out to the government the importance of nutrition in prevention and treatment of disease so that we get paid for managing the disease. That is going to be tough to do because of what's happening in the government and the economy, but I think the societies can only do this as a consortium, as a group.

Second the same societies need to get involved with medical school education. We are going to have to integrate nutrition into the curriculum. Medical schools are not as likely to have stand-alone courses in nutrition. Societies need to get together and encourage 100% of the medical schools to have a PNS on board to promote and integrate nutrition education into the curriculum. The consortium also should oversee education programs that are beyond medical school. We need to go to the undergraduate level to get people interested in nutrition and encourage them to pursue a professional career in nutrition.

Dr. Mechanick: So, we're shifting more from the exam and the certification emphasis to training, education, and then also legislative action.

Dr. McClave: We have all been in an experience before where we've contacted a medical school, our congressman, or some governmental agency and nothing happens. I've gone to Washington representing 1 society and not much happens. We need to come together as a group—collaboration is a key issue here. It would be difficult for the Accreditation Council for Graduate Medical Education to ignore a request that nutrition be part of the curriculum planning, when the letter was signed by 11 societies and stamped with their logos. There is strength in numbers, and we need to focus on how to open these lines of collaboration between interested societal groups.

Dr. Friedman: There is a national and worldwide crisis now in nutrition, both overnutrition and undernutrition. As a reviewer for medical journals, I was very much impressed that papers on clinical nutrition are written in isolation, without knowing what other investigators are writing. There's a lot of terrific information that should be collated and effectively utilized at the end of these sessions. We should focus on the various issues, which basically serve as a core type of curriculum for anyone who wants to be a nutritionist. Then, if they want to go into other medical or surgical areas, they can do so having achieved a certain knowledge base in nutrition.

Ms. Andris: The nurses within ASPEN have struggled with similar problems. While we have been lucky in the fact that our numbers have remained fairly stable over the past 5 to 7 years, we nonetheless had a goal to increase the number of nurses who were interested in and practicing nutrition support. We found that this was a goal that we were unable to achieve. With the support of A.S.P.E.N. however, we were able to join the Nursing Organizations Alliance. Through that alliance, we were able to make important connections with other nursing organizations, and I'm very pleased to say that our nurses have become recognized as

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experts in nutrition support with some of these other groups, and this has provided a lot of opportunities for us.

There's going to be strength in numbers. It's very important to reach out to other healthcare professionals and to share our expertise. This has provided us writing opportunities, speaking opportunities, and even more importantly, collaborative research opportunities within our nursing profession.

Dr. DeLegge: I have 3 very simple things to say. Number one is that in gastroenterology, we have 3 societies. We actually have a society of endoscopy. I'm not quite sure why we have that. We don't have a society of urinary catheters or a society of Foley bags, but we do have a society of endoscopy, and I can tell you that we get our clock cleaned on capitol Hill every year because we speak with 3 different voices. So, we really get nothing done because of the fact that we're split. So the first thing is that if we are going to change anything, then we are going to have to have a consortium.

The second thing is that if anybody in this room has an agenda, a self-agenda, then you are not really a leader. Leaders step above all that—it's not about us; it's about the people we are serving.

And the third thing, I feel we need to define what a nutrition physician is, because I'm not sure anybody has done that. And I would set that up as a challenge for the consortium. If you say gastroenterologist, I know what that is. When you say nutritionist, unfortunately it's a very nebulous topic.

Dr. Jensen: As we think about this consortium and moving ahead, one key observation is that the leadership and movers and shakers in all these organizations are in reality the same people. Many of them are in this room, so there really is opportunity for 1 broad vision.

Another priority that we need to keep in mind as we push a physician agenda at this meeting is that we must not abandon our multidisciplinary colleagues. I think we will find that they are actually our biggest allies, and that includes dietitians, nurses, pharmacists, social workers, and others. When you talk about a united voice in Washington looking for improved reimbursement, it's absolutely imperative that we come to the table with a broad coalition that would include the other disciplines. I'm quite confident that we will find that they will be no impediment and that they will be highly supportive.

Mr. Mirtallo: As a practitioner and pharmacist for over 30 years, my silo has been PN. That's where I've stayed. I have tunnel vision to that. But I've become more and more aware through my participation in work done over the last 2 years in defining malnutrition that there is much more to being a nutritionist than that silo activity.

One of the things that I want to learn from this conference is how we define nutrition. There need to be nutrition specialists or nutrition advocates in each profession. But there's such a breadth to what we call nutrition, from preventive nutrition to therapeutic nutrition to specialized nutrition. What is meant by a nutrition expert, and can we make everyone competent throughout the breadth of nutrition that we have? Just like physicians, the number of pharmacists in nutrition support therapy is decreasing as well. It seems like the honeymoon for PN is over. The reimbursement for nutrition services and nutrition teams is gone. We have the ability to do nutrition therapy more safely, so we don't have to be there to keep practitioners from killing their patients. So, when the novelty of PN was over, the numbers of pharmacists kind of fell out as well.

But there's a baseline importance of nutrition throughout healthcare that every professional needs to know, and we've got to grasp that and make nutrition an important part of our educational curricula, an important part of our training. We need to develop expertise in people who are going to maintain and advance the science of nutrition in the future in all the professions.

Dr. McClave: If you look at the curves, while the membership numbers of A.S.P.E.N. remain high, the number of physicians is falling off, the pharmacists are falling off, and the nurses are falling off. Even though it looks like we've got plenty of dietitians, the number of those in the leadership of that discipline (ie, the best available athletes) is falling off as well. So, any of the lessons that we will learn from this summit need to be applied to the other disciplines.

Dr. McMahon: One thing that needs to be discussed is how we value our worth. How do we get revenue? How do we show cost avoidance in PN at the institutional level? We need societies to come together and make a point that we can save institutions a lot of money if we use judicious nutrition support.

Similarly, with the work at TOS, the key point is not just how many patients we take care of with weight issues, but it's the decrease in the prevalence of obesity and obesity-associated conditions that is just as important. Societies and consortias need to get together and emphasize such matters.

Dr. Gramlich: Doctors in nutrition need affirmative action. Physicians are key opinion leaders, they are leaders of all of the interdisciplinary organizations, and they are often leaders within their specialty-specific organizations, whether it's gastroenterology or critical care. We need a merged solution built upon the idea that nutrition is integrative, and that as leaders, we wear multiple hats. With this leadership capability, there still needs to be affirmative action.

The second thing is that we need to generate capacity. We're going to be key opinion leaders, we're going to Capitol Hill to try to make a case for nutrition. We also need to stay in touch with industry and international

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opportunities, relative to national nutrition screening days. We have the ability to be key opinion leaders, but we need to generate capacity to replace all of us. I don't see a lot of young physicians in this room. Leaders in the future are going to have to come from medical school, postgraduate training, and then specialty training. So, if we focus only on the specialist, we're not going to get anywhere. In the absence of a strategy that looks at undergraduate and postgraduate training, we won't be successful.

Dr. Akabas: Maybe some of the consortium partners should actually be in physical activity and behavioral medicine. We should look outside of nutrition for partners to expand the reach.

Dr. Jaksic: The point that the speakers made about a consortium is very important—not just for education, but for research. One thing that we have to overcome is the cacophony of guidelines. An important issue for such a consortium to consider is that perhaps we could develope uniform guidelines for nutrition.

Ms. Malone: I work on a nutrition support team without a physician. We're pharmacist/dietitian/nursing directed. We are involved in residency training as well as medical student training. I see physicians that don't have a great deal of nutrition expertise. I see patients going out in the community, coming back into our facility with major nutrition problems, and no one has the expertise with which to manage those problems. One of the aspects of this consortium and this Summit should be to figure out how to educate our physicians so that they have a better understanding of what their patients are dealing with from a nutrition standpoint.

Appendix A: Summit Participants

Speakers: Caroline Apovian, MD; Joel Brill, MD; Mark H. DeLegge, MD; Gerald Friedman, MD; Doug Heimburger, MD; Tom Jaksic, MD, PhD; Robert Kushner, MD; Robert Martindale, MD, PhD; Stephen A. McClave, MD; Jeffrey Mechanick, MD; Frederick Moore, MD; and Scott Shikora, MD.

Discussants: Sharon Algers-Mayer, MD; David August, MD; Bruce Bistrian, MD; Toby Graham, MD; Leah Gramlich, MD; Refaat Hegazi, MD; Daren Heyland, MD; Gordon Jensen, MD, PhD; Paul E. Marik, MD; Molly McMahon, MD; Russel Merritt, MD; Charles Van Way III, MD; and Tom Ziegler, MD.

Participants: Sharon R. Akabas, PhD; George Cowan, MD; John Fang, MD; Matthew Haemer, MD; Michael Lewis, MD; Maria R. Mascarenhas, MBBS; Laura Matarese, PhD, RD; Anne Means; Suzen Moeller, PhD; Douglas Seidner, MD; and Jane White, PhD, RD.

A.S.P.E.N. Multidisciplinary Representation: Deborah Andres, RN; Ainsley Malone, MS, RD; Jay Mirtallo, MS, RPh; and Marion Winkler, RD, PhD.

Abbott Nutrition Attendees: Thomas Hancock; Nagendra Rangavajla, PhD; Christine Steele, PhD; Diane Tallman, RD; Julie Tomlinson; and Keith Wheeler, PhD.

Abbott Nutrition Health Institute Attendees: Kristen DeLuca, MS, RD; Kevin Garleb; and Michael Montalto, PhD.

A.S.P.E.N. Staff: Debra Ben Avram, MS; Patrick McGary; and Peggi Guenter, PhD, RN.

Participating Societies

AACE—American Association of Clinical Endocrinologists
AAP—American Academy of Pediatrics
ABPNS—American Board of Physician Nutrition Specialists
ACN—American College of Nutrition
ACS—American College of Surgeons
ADA—American Dietetic Association
AGA—American Gastroenterological Association
AMA—American Medical Association
ASGE—American Society for Gastrointestinal Endoscopy
ASMBS—American Society for Metabolic and Bariatric Surgery
ASN—American Society for Nutrition
DOD—Department of Defense
ES—The Endocrine Society
NASPGHAN—North American Society for Pediatric Gastroenterology, Hepatology and Nutrition
NBNSC—National Board of Nutrition Support Certification
SCCM—Society of Critical Care Medicine
TOS—The Obesity Society

References

1. Scolapio JS, Buchman AL, Floch M. Education of gastroenterology trainees: first annual fellows' nutrition course. *J Clin Gastroenterol*. 2008;42:122-127.
2. DeLegge M, Wooley JA, Guenter P, et al. The state of Nutrition Support Teams and update on current models for providing

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nutrition support therapy to patients. *Nutr Clin Pract*. 2010; 25:76-84.

3. U.S. Congress PubL. 101-445. National Nutrition Monitoring and Related Research Act of 1990. Washington, DC. 101st Congress
4. Weinsier RL, Boker JR, Brooks, et al. Nutrition training in graduate medical (residency) education: a survey of selected training programs. *Am J Clin Nutr*. 1991;54:957-962.
5. Committee on Clinical Practice Issues in Health and Disease. The role and identity of physician nutrition specialists in medical school-affiliated hospitals. *Am J Clin Nutr*. 1995;61:264-268.
6. Kushner RF, Thorp FK, Edwards J, Weinsier RL, Brooks CM. Implementing nutrition into the medical curriculum: a user's guide. *Am J Clin Nutr*. 1990;52:401-403.
7. Boker JR, Weinsier RL, Brooks CM, Olson AK. Components of effective clinical-nutrition training: a national survey of graduate medical education (residency) programs. *Am J Clin Nutr*. 1990;52: 568-571.
8. National Academy of Sciences. *Nutrition Education in U.S. Medical Schools*. Washington, DC: National Academy Press; 1985.
9. Adams KM, Lindell KC, Kohlmeier M, Ziezel SH. Status of nutrition education in medical schools. *Am J Clin Nutr*. 2006;83(suppl): 941S-944S.
10. Heyland DK, Heyland RD, Jones NE, et al. Creating a culture of clinical excellence in critical care nutrition: The 2008 "Best of the Best" Award. *JPEN J Parenter Enteral Nutr*. In press. http://www.nutritioncare.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=4570

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