

# Nutrition Apps: Opportunities to Guide Patients and Grow Your Career

**S**OFTWARE APPLICATIONS (APPS) available for download onto electronic devices number in the hundreds of thousands, changing daily. As software programs, these apps range from the simplest of free calculators and games to those purchased, and operate on tablets, mobile phones, and desktop computers. Peggy Turner, MS, RD, chair of the Academy of Nutrition and Dietetics' (Academy's) Informatics Committee, describes the ever-growing number of programs as an opportunity for engaging patients/clients. Not all of these programs on the market offer sound, evidence-based nutrition information, hence the need and opportunity for the profession to help guide patients.

According to a Delphi study undertaken by the Informatics Committee on the topic of nutrition informatics, 216 competencies in that field exist for professionals to achieve, and understanding the dynamic world of software applications is certainly a part of that.<sup>1</sup> The Academy has defined nutrition informatics as "the effective retrieval, organization, storage, and optimum use of information, data and knowledge for food and nutrition-related problem solving and decision making. Informatics is supported by the use of information standards, information processes, and information technology."<sup>1</sup> Proficiency in the utilization of various software packages that allow for the organization, storage, and usage of nutrition information is requisite to advance from novice to expert, or simply to work in the 21st century world of health care. In addition to apps dealing with nutrition, registered dietitian nutritionists (RDNs) also have at their disposal a number of apps, websites,

and books to help them understand the field of information technology (IT) from software design on up.

Apps can offer health care professionals another way to engage their patients, expand the reach of their practice, and potentially lower health care costs. The proliferation of these devices has become such that RDNs might not immediately recognize their potential for work-related activities. Among the goals of this article is that professionals, such as RDNs, recognize the opportunities available in terms of usage and, perhaps, even production and design.

## TECHNOLOGY AS OPPORTUNITY

Catherine Frederico, MS, RD, LDN, an adjunct professor at Newbury College and Regis College, doubles as an iPhone app developer and author on the topic. "The changing technology helps make this an exciting time to be an RDN," she said, adding an estimated 30,000 health apps currently exist within a pool exceeding 800,000. New ones are introduced as quickly as old ones expire. In her professional opinion, none of these programs will ever replace the RDN, physician, or nurse. Rather, they simply heighten the patients' need for direction regarding usage. They also serve to help RDNs in every endeavor from managing their own schedules to accessing nutritional data. Describing the apps as tools, no different than measuring tapes and scales, she said patients still need professional guidance regarding which apps to use and how to use them. "Failure to embrace this need as a professional opportunity simply leaves it open to underqualified individuals and nonprofessionals," she said.

In writings on the topic, Frederico observed that although the younger generation might feel more comfortable with the new technology, guidance is needed for them and their elder counterparts alike.

"As a college professor, I have learned while the current student demographic is quite tech savvy, most [are uninformed] about reputable nutrition information on the web or in apps unless it is pointed out to them. This problem is compounded for many aging seniors who feel that the tech generation has passed them by. I point out useful apps and websites in my classes, and new resources are targeting seniors to not only show them how to use digital devices but also how to use them to manage their health."<sup>2</sup>

In addition to using the programs for work with patients, RDNs are also developing their own as an enterprise or serving as consultants for companies already at work on those projects.

"Nutrition app technology is a new and growing field with opportunities to create for all nutrition specialties. Large and small companies are working in nutrition app development, but ironically they do not always think to hire an RDN on the development team. Some companies just purchase food or exercise databases without accounting for disease states or individuality. Therefore, when we hear of opportunities to contribute, RDNs need to be proactive in approaching companies with ideas they may have and ways they can be helpful to the project," she said.

Frederico herself has contributed to seven apps available in the iTunes store, and in July 2013 she said that she had three more in development. Due to the volume of apps out there, she pointed out that it is important for RDNs to promote and support each other in these ventures, using work created by or in collaboration with other RDNs. Learning to produce these programs does take work, and Frederico said RDNs interested in doing that should be prepared for the expense of hiring developers, graphic artists, and programmers, as well as marketing and analytics teams, if they desire to go that route.

Turner referenced the work of Jody Snyder Engel, MA, RD, and Nadine

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Fisher, MS, RD, LD, who offered a presentation titled “Don’t Worry Be Appy” at the 2012 Food & Nutrition Conference & Expo, describing their own endeavors in the creation of apps. Engel, a nutritionist at the Office of Dietary Supplements (ODS) within the National Institutes of Health, also serves as the ODS director of mobile and social media communications, for whom she initiated and led efforts to design a free ODS mobile app called “My Dietary Supplements” or “MyDS.”<sup>3</sup>

MyDS enables consumers to keep track of dietary supplements, as well as access its science-based information while providing general information about the ODS. Special features include personalized product profiles, personal usage records, and a field for notes and additional information about each app. Instead of notebooks or paper records, which can be lost or damaged, MyDS allows patients to keep the same data available to them at the touch of a screen on their mobile device.

Fisher’s app, “BCC,” provides information about dietary and behavioral risk factors associated with breast cancer,<sup>4</sup> as well as locations of cancer care clinics and RDNs in one’s geographic area. The mortality and prevalence rate of breast cancer in states and counties is also featured.

## Five Strategies to Maximize the Benefit of Apps in Your Practice

- Visit the Academy of Nutrition and Dietetics’ Nutrition Informatics blog at <http://www.eatright.org/media/blog.aspx?blogid=6442451184>.
- Visit the Academy of Nutrition and Dietetics’ App Reviews at [www.eatright.org/appreviews](http://www.eatright.org/appreviews).
- Read reviews of apps from other fields as well. Opportunity exists everywhere.
- Experiment freely with the use of apps in your own practice. Trial and error is a great teacher.
- Consider hosting a workshop on the topic for your own dietetic practice group.

## ENGAGING THE OPPORTUNITY

RDNs have a number of ways to learn about this technology. The Academy offers an online service through its website for the review of diabetes, gluten, and weight management apps.<sup>5</sup> In addition to lists and descriptions, the site features blogs by RDNs who can share their own experiences with the programs.

In July 2013, the app review section of the Academy’s website included reviews offered by three designated spokespersons: Marisa Moore, MBA, RD, LD, reviewer for top-rated, free iPhone apps concerning the management of diabetes; Jessica Crandall, RD, CDE, reviewer of top-rated, free iPhone apps concerning gluten-free eating; and Sarah Krieger, MPH, RD, LDN, reviewer of the top-rated, free iPhone apps concerning weight management.

Ratings are given on a scale of one to five stars, per the app reviews. Examples include “Bant,” a diabetes management app rated at four stars, which is designed to capture blood glucose readings and supply trend data for periods up to 90 days. The “Blood Sugar Tracker” received five stars, and allows users to log blood sugar levels, set blood glucose ranges, and view historic data and simple graphs to identify numbers out of range.

In addition to reviews by designated RDNs, the Academy hosts an Informatics Blog<sup>6</sup> where members can communicate with each other on the topic. The Academy’s Food and Nutrition Magazine also offers an app review through its website, at [www.foodandnutrition.org/Nutrition-Apps/](http://www.foodandnutrition.org/Nutrition-Apps/). In addition, the Academy’s website has updated a Knowledge Center FAQ page geared toward apps and smartphones at [www.eatright.org/members/content.aspx?id=8286](http://www.eatright.org/members/content.aspx?id=8286).

Frederico spoke at the 2013 Food & Nutrition & Expo on the topic of using nutrition tech gamification, or the use of game thinking and game mechanics to engage users in the solving of problems. She co-presented with Dan Baden, MD, from the Centers for Disease Control and Prevention. Although little research has been done on nutrition app development and long-term usage, there are opportunities for continued learning at conferences on the subject. Reading app reviews, reviewing existing literature, and personal try-and-error learning are all

good ways to approach the topic for the uninitiated, she said.

“Most responsibility falls on the [RDN] clinician to stay abreast of best practices for educating and fully engaging consumers in health care with both traditional and digital tools. With the impending US medical reimbursement model focused on keeping patients healthy, I fully expect to see physicians and nurses routinely referring all patients to follow-up with regular visits with their [RDN] health team member,” she stated.<sup>2</sup>

### ENGAGE THE PATIENT

Frederico and Turner agreed that the apps in question can be a productive means of engaging patients. As health care reform legislation continues in the direction of wellness, that concept is becoming more important on all levels, in terms of practice development as well as in reimbursement.

Studies that indicate lower levels of patient engagement result in higher health care costs<sup>7</sup> include a 33,000-patient project undertaken at Fairview Health Services in Minnesota, which comprises 41 primary care clinics, specialty clinics, and hospitals. The term *patient activation* was used to describe the skills and confidence involved in equipping patients to become actively engaged in their own health care.<sup>7</sup> Patient surveys were examined as they related to the patients' billed care costs, and the study's authors reported that patients with the lowest activation levels had predicted average costs 8% higher in the base year and 21% higher in the first half of the next year, compared with patients with the highest activation scores. Among patients with high cholesterol, those with the lowest activation scores had 12% higher predicted costs compared with patients with the highest scores, and patients with asthma showed a 21% difference. The analysis included inpatient and outpatient care costs for primary and specialty care, as well as laboratory costs.

The study concluded that as health care delivery systems are assigned greater responsibility for costs and outcomes, providers should be aware that patients' ability and willingness to manage their own health is essential to maximizing outcomes and minimizing costs.

Patient engagement is, thus, a significant concept concerning providers and government officials alike, and both are incorporating more health care IT tools.

Several components of Stage 2 Meaningful Use require patient engagement. Therefore, providers need to comply or face lower reimbursement. As providers become more familiar with and utilize more sophisticated IT tools, they are learning how to better engage patients and bolster outcomes.<sup>8</sup>

In February of 2013, the Office of the National Coordinator of Health IT unveiled a three-pronged patient engagement strategy designed to increase patients' access to their own health information, enable patients to take action with that information, and shift attitudes so that patients and providers alike can work in conjunct using health care IT to manage care.

“Patient engagement truly has the greatest potential for benefit in terms of not just health outcomes, but really transforming the system and improving the satisfaction of all of us in our interactions,” stated Office of the National Coordinator of Health IT spokesperson Erin Siminerio.<sup>8</sup>

The second stage of the plan will require providers to use secure e-mail with patients, and provide patients with methods of viewing, downloading, and transmitting their health information to third parties. The opportunity to be involved in designing the requisite software will be just as valid as the necessity of learning to use it.

Frederico pointed out that the various programs involved range in complexity, and some incorporate fun.

“Another novel way to engage patients in their nutrition care is to prescribe pertinent nutrition games on the web or with smartphone apps. A savvy clinician will ask clients about the points, badges, and rewards earned by playing these games to gauge patient knowledge and disease management skills,” she said.

However, as with any of the available programs, patients need guidance in which app to use and how, making the situation ripe for RDNs and their competitors alike.

### GETTING INVOLVED

Turner said a Nutrition Informatics Certification program is in the works, and added that the Nutrition Entrepreneurs dietetics practice group ([www.nedpg.org](http://www.nedpg.org)) has a Technology and Social Media subgroup on the same topic. The Clinical Nutrition Managers dietetic practice group ([www.cnmddpg.org](http://www.cnmddpg.org)) also has a Food and Nutrition Informatics subgroup. RDNs are actively sharing advice about which apps work best and which to avoid, all the while using computer software to message back and forth. Opportunities to reduce cost are quite apparent and part of the move from paper-based records to electronic. The Academy's Delphi study on the subject is available for review online,<sup>1</sup> offering detail about the competencies to be required not only for future certification, but for day-to-day work. The role technology plays in health care will only increase, creating new opportunities along the way.

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