

# Practice Extenders and PDA-Based Counseling for Smoking and Unhealthy Diet

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## PURPOSE

Members of the Alabama Practice Based Research Network (APBRN) explored the feasibility of using personal digital assistants (PDAs) as a means of integrating into routine clinical practice brief, evidence-informed interventions following the 5 A's model for assessment and counseling of behavioral health risks (ask, advise, assess, assist, arrange).<sup>1-3</sup> Practice extenders (PEs) were used to augment the assist and arrange steps and to support patients' efforts to change unhealthy behaviors.

## METHODS

Eight family physicians in 5 practices located in and around Birmingham, Ala, delivered PDA-based 5 A's behavioral smoking and obesity interventions to more than 200 male and female adult patients during routine clinic visits over a 9-month period. The physicians and PEs (1 assigned to each practice) were trained in the study protocol. Graduate student research assistants fulfilled the PE role for this study, receiving specialized training in smoking cessation and dietary modification, as well as in methods of health promotion and disease prevention counseling, including motivational interviewing.

The PDA-based interventions, which included a data collection and referral mechanism, were created using Pendragon Palm OS database software (Pendragon Forms; Pendragon Software Corp, Libertyville, Ill). With content grounded in clinical practice guidelines,<sup>1-3</sup> the interventions prompted physicians through the 5 A's steps at the point of care. Value-added features (eg, automatic body mass index and Fagerstrom score calculations, behavior modification tips) allowed for the personalization of each intervention, which is known to be important in encouraging patient compliance.

Patients who indicated readiness to change at the assess step were informed of the availability of PE services. Physicians obtained and recorded consent on the PDA. Data collected during interventions were automatically transferred to a secure off-site server when the PDA was synchronized with the physician's desktop computer, then retrieved at the APBRN Coordinating Center at the University of Alabama at Birmingham. Offices could also alert PEs by fax that a patient had requested assistance.

On initial telephone contact, PEs confirmed patient interest and worked with patients to develop plans for the behavior change. They mailed personalized packets containing a printout of the plan, self-help materials, and information on free or low-cost community-based resources. PEs conducted telephone follow-up 1 week and 1 month after the change date, and were available for telephone support between scheduled contacts. After the 1-month follow-up, the PEs provided progress reports to the physicians.

Outcome measures included physician adherence to the study protocol, patient consent to PE contact, delivery of PE assistance, and patients' self-reported behavior change. End-of-study qualitative review with the physicians and PEs provided further insights related to feasibility, utility, and sustainability of the system and its potential to affect patient outcomes.

## CHALLENGES AND LESSONS LEARNED

The Chronic Care Model, with its 6 elements (community resources and policies, health care organizations, self-management support, delivery system design, decision support, and clinical information systems<sup>4,5</sup>), has been recommended as a template for improving preventive services and for effective chronic disease management.<sup>6</sup> Our study embraced all components of this model.

In a previous study, APBRN physicians reported positive responses by patients to their use of PDAs during clinical encounters; no objections arose during the current study. Design limitations of the software used (Pendragon Forms), specifically limitations related to formatting and navigation options, made functionality of the PDA protocols less than optimal, but compared with other products, this software was still best suited to support the decision trees. Development and testing of the intervention programs proved arduous, but the software operated smoothly once deployed. Between the discontinuation of Pendragon's database-hosting services and the need to upgrade the software (to version 4.0) to enable interfacing with a new off-site server, programs created in the previous study had to be rebuilt. Without in-house information technology expertise, these technical challenges would have been considerable.

Installation of the hardware and software necessary to establish server connectivity at the practices was time intensive. Each system had to be configured individually, and this task involved circumnavigating firewalls to allow for data transfer without compromising security, which required advanced information technology support. Logistics and compatibility issues prevented the printing of data directly from the PDA at the time of contact, which would have enhanced the intervention's "teachable moment" and been valuable for documenting information in the chart and follow-up. Once established, the system functioned smoothly, with the only barriers encountered being those related to human error (eg, physicians forgetting to charge or synchronize the PDA).

Despite high initial enthusiasm and thorough training, buttressed by ongoing communication and site visits, physician compliance with the study protocol decreased with time. This waning compliance was primarily due to competing practice demands and lack of incentives, but also to characteristics of the study design. Although the protocol was fairly simple, using 2 separate PDA-based interventions addressing 2 distinct health issues and simultaneously working with PEs proved challenging for physicians and staff. This study demonstrated that consistent use of behavioral interventions cannot be guaranteed given competing demands on practices' time and energy.

Of the more than 200 patients who received a PDA-based intervention to address smoking or unhealthy diet and were ready to change their behavior, most (56%) availed themselves of PE support. Although this study was able to accommodate patients who requested PE contact outside of business hours, this level of personal support would not likely be available in the clinical setting. Whether success-

ful in changing their behavior or not, many patients expressed the value of having someone who cared enough to make an effort to help, referring to the PE as well as their physician.

Physicians received unsolicited positive feedback from patients who were successful in changing their behavior and who attributed their success in part to support, information, or both received from the PEs. Because of logistical and practical considerations, research assistants fulfilled the PE role for this study. In addition to orientation to the study protocol, they required specialized training in the target behaviors. Although PEs may aid busy physicians in implementing the assist and arrange steps and increase the likelihood that patients will act on physicians' advice, their feasibility and sustainability within the current primary care clinical setting remain to be determined.

PEs referred the patients in this study to national toll-free help lines, Web sites, and community-based self-help programs for smoking cessation and weight loss, emphasizing the use of free or low-cost resources to aid patients' behavior change efforts.

## CONCLUSIONS

PDA-based behavior change interventions may be an accessible, relatively low cost and easy-to-use tool that can be integrated into everyday practice, but only if consistent with physicians' priorities. PEs may be a valuable adjunct to traditional care and enhance patient compliance with physicians' recommendations, but integration of such services into the current health care model would likely require changes in systems. A PDA-based behavior change intervention and referral system nevertheless has the potential to be successfully implemented in the clinical setting.

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**Key words:** Computers, handheld; smoking; diet; obesity; practice extenders; health care delivery/health services research; health promotion/disease prevention; practice-based research; research capacity-building

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# Bringing the Behavioral Health Improvement Program (BeHIP) to Rural Kentucky

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## PURPOSE

Cost-effective strategies for assisting patients in behavior change are needed at the primary care level. The purpose of this project was to determine the feasibility and effectiveness of linking rural practices with an established telephonic counseling service housed at an academic medical center.

## METHODS

We enrolled 32 rural primary care clinicians (14 practices) from the Kentucky Ambulatory Network and educated them about the counseling services available to their patients through the Behavioral Health Improvement Program (BeHIP) at the University of Kentucky, Lexington, Ky. Clinicians referred their patients for smoking cessation or exercise counseling by giving them a prescription that was printed with the program contact information. Once patients called, their consent was obtained, and they were matched

with a personal health counselor who performed behavioral assessment and staging, assisted patients with goal setting, and scheduled telephonic follow-up. All protocols were approved by the University of Kentucky's Institutional Review Board. An overview of the counseling program for sedentary lifestyle is presented in Table 1.

## LESSONS LEARNED

One lesson learned was that rural primary care clinicians were eager for external resources that can assist their patients in behavior change, and were willing to refer their patients to such programs. Of the 34 clinicians initially contacted, only 2 declined to participate. Clinicians received no remuneration for their time spent orienting to the program (about 1 hour) or for their time spent talking to their patients about the program or making referrals.

Of the 32 clinicians who consented to participate, 25 actively referred patients during the 8-month study