MEDEX Northwest grew from a vision that the health care needs of many medically underserved Americans could be partially met by training military corpsmen and medics to assist overworked physicians. In 1969, 14 individuals with military medical training formed the first physician assistant (PA) class at the University of Washington in Seattle. Having enlisted the support of physician organizations, individual physicians, local communities, and the state’s medical association and legislators, the program’s founder soon placed these early PAs in primary care practices in rural and underserved areas of Washington state. As the PA profession expanded, program leaders continued to work locally and nationally to gain acceptance and recognition for this new kind of clinician. In the course of nearly 40 years, MEDEX has grown in size (80 students per entering class), range (3 classroom locations and over 400 clinical sites), and curricular depth (over two years of intensive training). MEDEX graduates work in practices from remote primary care offices to cutting-edge specialty services at large urban institutions. With a background of helping to build a new profession, MEDEX continues to be innovative in training new PAs who seek to improve the health and well-being of their patients.

A NEW HEALTH PROFESSION

MEDEX was never simply about the development of a new health profession. Instead, MEDEX was conceived as a strategy to transform health care. The MEDEX concept was developed by Richard A. Smith, MD, a brigadier general in the US Public Health Service and a former medical director for the Peace Corps. Educated as an epidemiologist and experienced in policy development, international health, and human rights issues, Dr. Smith was interested in the idea of “multiplying my hands” through the training and deployment of health workers. The MEDEX principles, developed at the University of Washington, were subsequently applied to training health workers internationally through 21 years of MEDEX International, which was based at the University of Hawaii.

A 1971 evaluation of the MEDEX Demonstration Project for its federal contract described the program, as follows:

MEDEX is not a training program for health manpower. MEDEX is a technological tool to develop and deploy manpower for specific needs. The MEDEX approach evaluates need [and] develops a receptive framework for manpower that is then trained towards those needs within a competency-based training program. On completion of training the appropriate manpower is deployed to areas of low accessibility. This predetermined deployment to areas of need is one of the distinguishing characteristics of the MEDEX approach. The system assures placement of trainees by involving the practitioners in the total process from the very beginning.1

Thus, a key feature of the MEDEX model as it was developed in Seattle (Figure 1) was to involve community-based physicians and their communities as significant stakeholders in the program.1 Many of these physicians were on the verge of leaving their rural practices due to 24/7 call and the absence of available physician partners.1 These individual physicians, all part of an active Washington State Medical Association (WSMA), provided the leadership necessary to promote the program locally and regionally. Their activities included

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town-hall meetings, the involvement of lawmakers, and even the assignment of the first physician assistant (PA) students to the practices that provided medical care for key state legislators. As a result, WSMA served as the successful sponsor for one of the first state enabling legislative acts for PA practice in 1971. These same physicians served as the first preceptors and employers for the initial MEDEX graduates and subsequently have served as long-term advocates for the MEDEX program and the PA profession.

Another central consideration in framing the MEDEX concept was the desire to leverage the training of military corpsmen and medics returning from the Vietnam conflict. This medical training, which was estimated to cost the taxpayer approximately $25,000 per person in 1970 (the equivalent of $126,000 in 2005 dollars), was not directly transferable to civilian health care careers. Dr. Smith believed that this practical medical background could be built on and expanded with focused classroom and clinical instruction to create a new civilian health professional.

Dr. Smith’s choice to locate the MEDEX program at the University of Washington (UW) was also critical to the program’s impact. Dr. Smith had earlier received his public health training at the UW and was already well connected with leaders in the School of Medicine and the community. As a regional medical school, the UW has long served the sparsely populated rural states of Washington, Alaska, Montana, and Idaho (initially referred to as “WAMI,” this region became “WWAMI” with the subsequent addition of Wyoming). The medical school’s regional mission provided the opportunity to maximize the MEDEX impact by deploying students throughout a large geographic region. This regional approach also provided the potential for interaction with medical associations and congressional delegations from four states simultaneously, thereby creating a template for funding and policy initiatives on a national level.

Dr. Smith capitalized on his knowledge of federal systems to secure federal funding designated for the PA profession (Public Health Service Contract PHS HSM-110-69-183). This demonstration project funding increased the visibility of the new profession within the Department of Health and Human Services and led to further federal support of PA programs. Dr. Smith also sought the endorsement of organizations such as the American Medical Association (AMA) and the American Academy of Family Physicians (AAFP). To this end, he was in frequent communication with Dr. Amos Johnson, the North Carolina physician famous for promotion of the PA concept based on his employment of Buddy Treadwell in a PA-like role. Together they spoke with the executive directors of all of the state medical associations and worked with the House of Delegates of the AMA to pass a resolution that gave the green light to state medical boards to pass PA practice legislation. This decision was later discussed by members of AMA’s Council on Health Manpower.

### Figure 1. The MEDEX Model as Described in 1971*

**Basic Elements of MEDEX**

- **Collaborative Model**
  - Practicing physicians
  - Medical associations (organized medicine)
  - Training institution (medical school)
  - Other health organizations

- **Receptive Framework**
  - Legal
  - Insurance
    - Malpractice
    - Third-party payment system
  - Community preparation
  - Imagery

- **Deployment System**
  - Directed to areas of need
  - Assurance of placement

- **Competency-Based Training Program**
  - Predicated on
    - Needs assessment
    - Task analysis

- **Practitioner Involvement**
  - Needs assessment and task analysis
  - Selection and matching
  - Utilization of practicing physicians as teachers/preceptors
  - One-to-one relationship between Medex and physician in training and employment

- **Continuing Education**
  - To extend training process
  - To provide continuous growth

*Data from MEDEX staff."
fostered discussions with Dr. Robert Howard at Duke University about student and professional concerns and with his colleague Dr. Harvey Estes regarding physician acceptance of PAs.

Having selected the Pacific Northwest as the best environment for the new profession, Dr. Smith decided that he needed an actual role model to assist in the development of the job, the curriculum, and image for the new profession. Bill Freeman, an army medic who had also been a Peace Corps volunteer in Colombia, heard about Dr. Smith’s project and walked into his office in Washington, DC, to offer his assistance. Freeman was hired immediately and joined Dr. Smith in Seattle for the start-up phase of the MEDEX program. Freeman later became a physician and served as director of research for the Indian Health Service.

The next step was the creation of a name and a process for recruitment and selection. The concerns were that the name of the new profession be both a title and a term of address, that the name be descriptive, that it have few syllables and be easy to say. Dr. Smith insisted that it include either a “hard-K” or an “X” sound, both of which are associated with strong and powerful names in the Romance languages. The result was MEDEX, (from the French médecin extension, or physician’s extender). In all capitals, “MEDEX” referred to the program, with “Medex” referring to and serving as a title for the individual clinician. This term was used by each of the eight MEDEX programs that were subsequently created throughout the United States and also for Dr. Smith’s international MEDEX activities, resulting in the deployment of many Medex practitioners around the world. MEDEX Northwest in Seattle is the only remaining MEDEX program.

Early on, MEDEX initiated a concentrated recruitment process utilizing military newspapers and communication sources. Over 80 military corpsmen or medics applied to MEDEX in its first year. Candidates were brought to Seattle for a full day of group interviews, using members of WSMA as interviewers. These same physicians were committed to being the first MEDEX preceptors and were interested not only in selecting a group of students for the first class but also in choosing an individual to work with each of them in their own practices. Thus, the first selection conferences were both admissions interviews and match activities. In a process originally developed for the Peace Corps, candidates were interviewed in small groups by groups of interviewers. Interviewers assessed not only academic and clinical performance, but also potential fit in the communities that had participated in the initial town meetings where the program had been promoted as a...
strategy for retaining community physicians. Formal interviews were augmented by careful observation of candidate behaviors by non-interviewing MEDEX staff members.

A class of 14 students completed the first MEDEX class (1969–1970). They ranged in age from 19 to 39 (averaging 27 years), and all were male (Table 1). There were three representatives of ethnic minorities (one African American and two of mixed race — white and Hispanic, and white and Native American). Their most recent service branches prior to enrollment were Army (6), Air Force (4), and Navy (4). Approximately two-thirds of the first class came from small towns or rural areas. As returning military personnel, students received tuition and stipend support as part of the program’s federal grant.

The initial MEDEX curriculum was designed to take advantage of the similar medical training these students had received in the different branches of the military. Three months of didactic instruction built on that training, followed by a full year of clinical training with the matched primary care preceptor. The intent was that the physician would want to tailor the individual Medex’s clinical training to best meet the needs of a specific practice. This would not only make the Medex highly efficient for the practice, but would also encourage long-term retention of the new professional in physician practices. This model of training that placed students in primary care practices produced graduates who predominately chose primary care employment.

In addition to physicians, medical educators, and evaluation specialists, the MEDEX staff included a community psychiatrist, Dr. Ray Vath. Dr. Vath developed didactic content and tools to assist the students in adjusting to a medical role with civilian populations. He also maintained communication with the students’ wives as they adjusted to living in new communities and to their husbands’ new role in medicine. Dr. Vath spent time with physicians and their communities to facilitate a welcoming and supportive environment for these new clinicians. Frequent site visits were conducted to observe the students in their clinical sites and to modify the program in response to their experiences.

Dr. Smith felt that the visibility of the program and students was crucial to their success. He therefore sought to build a large graduate pool by enrolling more than one class per year in the early stages of the program. By the time he left MEDEX in 1972, there were 48 graduates (from the first three classes) of the program, many of whom were employed in remote and/or medically underserved areas of the Northwest. An additional 47 students were already enrolled in or admitted to the next three class cohorts.

Media involvement in disseminating information about the new career provided additional exposure. At one point, Dr. Smith worked with several producers in Hollywood to create a TV show about MEDEX. Although this was an unsuccessful endeavor, he was responsible for the placement of
articles about MEDEX in Parade magazine, which had the largest circulation of any weekly magazine in the country, via local Sunday newspapers. He also wrote about his experiences for JAMA, the Lancet, Northwest Medicine and public health journals, among others.\textsuperscript{5–15} National news broadcasts also covered the new project,\textsuperscript{16} and Roger Mudd’s CBS News program featured a segment about John Betz and Paul Snyder, two graduates of the first class practicing in rural Washington.\textsuperscript{17}

As national attention was focused on physician assistants, physician associates, and Medexes, the AMA took the leadership to develop an accreditation process for PA programs through the Committee on Allied Health Education and Accreditation (CAHEA). At the same time a process was initiated to create a national certifying exam through a structure that became the National Commission on Certification of Physician Assistants (NCCPA). William Stanhope from Duke University, Loretta Ford from the University of Colorado, and Steven Turnipseed from MEDEX were appointed to participate in developing both the accreditation and certification processes. For several years these three individuals were integral to a collaborative effort that mirrored the relationships PAs had with their sponsoring physicians. PA professional organizations thus became equal partners with physician organizations in setting the standards for the new profession, its educational programs, and its graduates.

MEDEX grew to include programs at eight universities (Table 2), with at least one in each time zone. Using a Boeing-donated mainframe computer, the MEDEX clearinghouse in Seattle provided information to both applicants and physicians. The admissions function of the clearinghouse could be seen as the forerunner of today’s centralized application service in that it processed applications and other data from applicants to several programs in the MEDEX group. The MEDEX programs joined together in a Council of MEDEX Programs, which met primarily by phone to work on broad-based concerns such as the receptive framework for programs and the profession.

By 1972, Dr. Smith felt that MEDEX was successfully established and would now benefit from a different type of leadership. Seeing himself as a pioneer rather than a settler, Dr. Smith negotiated the beginnings of MEDEX International with the University of Hawaii, and Dr. David Lawrence was appointed as the second director of MEDEX Northwest. By now the program was located in the University of Washington’s new School of Public Health and Community Medicine, where it was seen as a rich resource for health services research about the new profession and its utilization.

Dr. Lawrence also had a strong public health background as well as excellent administrative and organizational skills. Under his leadership the program stabilized, refined and expanded its curriculum by lengthening the didactic phase to 6 months, and admitted the first students without a military medical background. A graduate of the first University of Utah MEDEX class, Harry Felton, joined the Seattle MEDEX faculty and participated in further modifications of the competency-based curriculum. Dr. Lawrence’s tenure with MEDEX coincided with the development of the new specialty of family medicine and a resurgence in primary care initiatives. He was committed to the creation of an interdisciplinary Department of Primary Care at the UW, but this effort failed, due in part to the intractable boundaries between specialty organizations and physician reluctance to include midlevel providers as equal academic partners. During this period, what would become the UW’s first nurse practitioner (NP) students were enrolled in the MEDEX program’s Class 7 (1973-1974). The following year, the School of Nursing created a freestanding NP program. Because of this initial joint activity, however, many aspects of the MEDEX curriculum and the NP program are similar, especially the physical assessment course.

Dr. Lawrence left the University of Washington in 1976 to become the health officer for Multnomah County in Portland, Oregon. He later joined Kaiser Permanente, eventually becoming the chief executive officer. At this time, MEDEX had one physician as program director and another physician as medical director. The medical director was usually promoted to program director as each of the program directors moved on. Dr. Lawrence was succeeded in the directorship of MEDEX by a pediatrician, Carol Jenny, MD, (1976–1977) who is now a nationally recognized expert in DNA evidence for rape and abuse cases; Robert Harmon, MD, (1978–1980), whose specialties were internal medicine and public health, and who went on to become the director of the federal Health Resources and Services Administration (HRSA) and now works for United Healthcare; and Andrew Penman, MD, (1981–1983) an Australian internist who is now CEO for the Cancer Council of New South Wales.

**EARLY 1980s: MEDEX IN CRISIS**

In 1981–1982 the MEDEX program suffered a severe crisis that nearly led to its demise. PAs trained in non-MEDEX programs moved to Seattle for employment and became concerned about the short duration of
MEDEX training. Despite MEDEX’s excellent record of certification exam performance and strong employment in primary care, these non-MEDEX PAs believed that the one-year program was too short and did not provide sufficient training in specialties and inpatient roles. Vacancies in PA faculty positions at MEDEX resulting from federal funding cuts raised additional concern. The PAs presented their reservations about the program’s credibility to the Board of Medical Examiners and WSMA. A hearing was held by the board and the situation was debated in the WSMA House of Delegates. Dr. Smith returned to Seattle to support the program, and newly hired faculty members were introduced at the hearing.

At this time, federal health workforce reports were predicting an oversupply of physicians. WSMA was carefully following these reports and was also concerned about a perceived threat from NPs to form independent practices and lure their patients away. While it couldn’t control the NPs, WSMA did believe that it could influence PA practice. As a result, the 1981 WSMA House of Delegates voted to recommend that the UW close the MEDEX program. The program’s location in the School of Public Health (rather than the medical school) protected the program long enough for Dr. Penman to negotiate the creation of a new advisory committee composed of representatives of WSMA and the UW.

In April of 1982, a statewide conference was held in Seattle with more than 200 invited guests representing all the primary stakeholders, including physicians, hospitals, labor unions, legislators, policy makers, and health care consumers. A briefing document was prepared for participants to review ahead of time so that they would be well informed about PAs and the history of the MEDEX program. Medical leaders from outside the Northwest described and recommended new roles for PAs in areas such as emergency medicine, geriatrics, and surgery. Community and academic leaders facilitated a structured analysis to explore these new practice options. The outcome of the conference was vocal support for continuing the MEDEX program, but with revisions to the curriculum that would better position program graduates for new and emerging roles. In 1983, MEDEX lengthened its curriculum to 18 months by adding a third didactic quarter and 3 one-month clerkships (in addition to the six-month primary care preceptorship).

Deep cuts in federal funding were another crisis for MEDEX in 1980-1981. The federal policy reports that predicted an oversupply of physicians had a direct impact on PA and NP funding. In order for the program to remain viable, the School of Public Health had to find a funding stream to keep it open. Threats to other UW programs designed for second-career students in engineering, business, and public health led to a conversion of these programs — as well as MEDEX — to a “self-sustaining” status within the University of Washington. Programs in this category were allowed to retain their own tuition (with a surcharge to the University for administrative costs) and to function in an entrepreneurial manner by setting their own tuition, determining class size, and carrying forward surplus funds from year to year. With this transition, MEDEX was once again on more stable ground.

When Dr. Penman returned to Australia in 1984, William Callen, PhD, a psychologist employed by MEDEX for many years, became acting director of the program while a national search for the program director’s position was initiated. At this time, PA faculty members were beginning to move into leadership positions in PA programs around the country. Ruth Ballweg (lead author of this paper), was named program director of MEDEX in 1985, with Jennifer Johnston joining her as the program administrator.

**THE LATE 1980s: THE TIDE TURNS**

By the late 1980s, the tide had turned from concern about not enough jobs to a concern about not enough PAs. In order to maintain a strong presence in the midlevel practitioner environment, the American Academy of Physician Assistants (AAPA) began pressuring the Association of Physician Assistant Programs (APAP) to expand the numbers of PAs. The 1988 APAP conference in San Diego included a panel on options for increasing PA enrollment through the creation of new programs, expansion of class size in existing programs, and development of satellite or distance-delivered programs.

MEDEX became involved with all three of these options. Elected president of APAP for the 1990-1991 term, Ballweg took on the question of new programs. Through a series of new program workshops, APAP hosted university leaders and policymakers interested in the development of new PA programs. The number of PA programs grew over 15 years from 56 to the current level of 136 programs. MEDEX faculty members served as consultants to several institutions working on program development, particularly those interested in primary care curricula, clinical training in rural settings, and the recruitment of a diverse student body.

MEDEX itself considered strategies to expand through increased class size in Seattle and potential satellite sites. The addition of a
optional MEDEX-specific bachelor’s degree (the bachelor of clinical health services) in 1986 increased the program’s attraction to a broad range of applicants. Seattle enrollment increased from 24 in 1984 to 40 full-time and 6 part-time students in 1992. Satellite expansion was consistent with the regional nature of the UW, which offers professional and graduate programs for students from other states throughout the sparsely populated rural Northwest.

**MEDEX EXPANDS: SATELLITE PROGRAMS**

The MEDEX presence in Alaska began with Class 4 (graduation 1973), when it deployed almost the entire class to be the first PAs in Alaska. PAs became more visible in Alaska when they provided health care to workers building and maintaining the Alaska pipeline, beginning in 1973. MEDEX collaborated with Alaskan tribal groups in 1981 to identify and train community health workers as PAs. Building on this experience, MEDEX received one Health Careers Opportunity Program (HCOP) grant and two Rural Health Outreach grants from HRSA. The HCOP grant created preparatory academic opportunities (called the Bridge Program) for health aides admitted to MEDEX. The first Rural Health Outreach grant was designed to orient and train PAs, NPs, and medical students to meet the unique needs of remote Alaskan villages. The second grant — a partnership among MEDEX, the Yukon-Kuskokwim Health Corporation, the SouthEast Alaska Regional Health Consortium, and the University of Alaska Southeast — was designed to create a MEDEX satellite in Alaska. The grant activities included creation of distance-delivered prerequisite courses, increased recruitment activities, and delivering the didactic curriculum in Sitka, Alaska, to 12 students in the 1993–1994 academic year.

MEDEX faculty member Grace Landel led the Alaska satellite project in Sitka. This island town on the rugged coast of southeast Alaska, which at the time experienced periodic mail delays and phone interruptions, was a 5-day ferry ride or an up to 8-hour plane ride from Seattle. Instruction was provided by Landel and two additional PA faculty members as well as clinicians from the local community. The Sitka faculty worked creatively with their Seattle counterparts to deliver a curriculum identical to that delivered in Seattle. While the program was highly visible and successful in training 12 Alaskan students, the projected ongoing funding from the state of Alaska evaporated when the price of oil plummeted and the state budget went into deficit, with the result that no new students were enrolled in Sitka.

The MEDEX Sitka experience with decentralized didactic training helped to formulate principles that were applied to the development of two subsequent sites in eastern Washington. The MEDEX satellite training model provided PA educational opportunities for place-bound students who had difficulty relocating to Seattle for the didactic portion of training, and also had the economic advantage of a centralized administration in Seattle that could manage finances, admissions, and the coordination of all didactic and clinical training. The three didactic sites — in a large city (Seattle), medium-sized city (Spokane), and small town (Yakima) — have made the program attractive to students from these types of communities throughout the WWAMI region. A clinical training model that allowed students to return to their home communities for rotations during their second year also promoted deployment of students and graduates throughout the WWAMI region and allowed the program to continue to influence the expansion of PA utilization in five states.

The requirement by both the MEDEX program and the accreditation commission that there be educational equivalency of curriculum content and delivery across all sites was fundamental to the decentralized model. Multiple monitoring strategies were implemented to evaluate this equivalency and initiate rapid correction if necessary. Programwide evaluation has traditionally been an ongoing faculty activity that includes consultation with specialists in the UW Department of Medical Education. A MEDEX Evaluation Committee was formed recently to centralize and coordinate evaluation activities. The structure for the delivery of the MEDEX course content across multiple sites includes a designated chair for each course as well as course coordinators at each of the other sites. These faculty members work closely together to manage and modify course content and to develop assessment tools that ensure equivalency. Regular communication among the course faculty members and with the MEDEX didactic coordinator ensure that each course is delivered consistently.18

Supported by this robust structure, Barbara Gunter-Flynn, a MEDEX graduate, provided leadership for the new Yakima site when it opened in 1994. As of 2006, 165 graduates have trained at the Yakima location. The Spokane site, also led by Gunter-Flynn in its initial years, began in 1997 and has graduated 133 students. The employment data for these students show that most have returned to their original communities and that a large portion of them have chosen to work in primary care settings. One unexpected trend was the recently increased utilization of PAs in specialty practices in small
MEDEX TODAY AND LOOKING AHEAD

During the height of health reform in 1994, the program negotiated a move back to the School of Medicine from the School of Public Health. The increased emphasis on primary care, the program’s expanding enrollment and regional presence (Table 1), and leaders in the School of Medicine who correctly saw the need for increased utilization of PAs within the university’s health care system, led to this transition. The MEDEX faculty saw this as a welcome opportunity for the program and sought active involvement in the medical school.

Ten years later, the program has been well integrated into the School of Medicine. While its academic home is in the Department of Medical Education and Biomedical Informatics, the program retains its self-sustaining status and manages most of its own affairs. This essentially freestanding status is designed to prepare the program for transition into departmental status, which was considered in the 1994 negotiations. In 2007, the MEDEX faculty are working to move toward this new position within the medical school.

MEDEX faculty members have served on major committees and task forces within the School of Medicine, including groups that have worked on major curriculum change, the primary care mission of the school, the admissions process, and the health science center’s response to the ACGME-mandated 80-hour work week for residents. Using the same collaborative principles that MEDEX uses to work with rural communities, MEDEX now works with the School of Medicine’s clinical departments on issues of job development, recruitment, and utilization. MEDEX faculty work clinically in the Department of Family Medicine, and others have been involved in the School of Medicine’s research activities.

Health reform also led to bridge-building among the University of Washington’s health sciences schools. There has been increased emphasis on interdisciplinary learning, service, and research, which has created new energy and provided a positive recruiting edge to the schools. Activities include student-directed projects such as Student Providers Aspiring to Rural and underserved eXperience (SPARX), faculty-coordinated activities such as Health Science Partnerships in Clinical Education (HSPICE), interdisciplinary and shared courses, and federally funded grant initiatives with interdisciplinary student activities. MEDEX students participate in problem-based learning with second-year medical students. Nurse practitioner and physical therapy students are enrolled in the MEDEX pathophysiology course. MEDEX students participate in multiple interdisciplinary service learning activities including bioterrorism and pesticide grant projects in the School of Public Health and rural interdisciplinary projects with the School of Nursing. There is also a joint PA-PharmD degree arrangement with the University of Washington and Washington State University.

In March of 2006, the program made a decision to convert to a master’s level with the entering class of 2009. While the faculty felt that this transition was inevitable, they also continued to see graduate-level training as presenting barriers for students from military, rural, and disadvantaged backgrounds, as second-career students would continue to face difficulty accessing baccalaureate degrees. Having taken a visible and vocal position at the national level against a national requirement for a master’s degree, the faculty felt that there were two ways to view this transition. One position would be to say that MEDEX had lost the debate. The alternative would suggest that MEDEX had successfully held back the tide as long as possible, and that by doing so, hundreds of second-career PAs who would not otherwise have had the opportunity for entry into the PA profession were trained by the MEDEX program. MEDEX chose the second view.

As with all PA programs, MEDEX has been increasing its academic rigor over the past 10 years. The MEDEX faculty have also been learning from other programs making the transition to master’s degrees, and have implemented several curricular changes. These include an online anatomy and physiology review course, which is required for all students prior to beginning classroom coursework; the addition of a 4-week basic science review course; increasingly complex written assignments throughout the curriculum; and expanded content related to professionalism and ethics.

The three-site nature of the didactic curriculum, combined with the geographically dispersed clinical phase, has created the opportunity to expand the use of technology, including teleconferencing, for academic and administrative purposes, online delivery of some course materials, and communication among students across all three sites. A centralized test-item bank, online testing, weekly
online board review question sets, and electronic patient logging for the clinical year allow us to explore new directions in PA education.

Throughout its history, MEDEX has contributed to health services and health workforce research. Beginning with Dr. Smith’s original publications in the *Lancet* and JAMA, this has also included retrospective data about MEDEX graduates, focus articles on specific populations such as PA and community health aide training with the Alaska Native and Native American populations, information about MEDEX teaching innovations, reports about various federally funded initiatives, and correlations of graduate deployment data with academic degrees. In addition to the PA on the faculty, the active MEDEX research enterprise currently includes two physicians, a research director who is a writing specialist, a health services researcher with a background in medical geography, and an educational psychologist.

MEDEX continues to apply Dr. Smith’s collaborative model concept to a number of special initiatives. Based on requests and interactions with specific communities, institutions, and organizations, MEDEX is working on the development of the PA concept internationally (British Columbia and Australia), the support of existing careers needing academic credentials (paramedics in King County, Washington), and the creation and implementation of new health careers (dental health aide therapists in Alaska). MEDEX is also beginning the process of revising the MEDEX International Health Worker training and supervision modules, which have been translated into 33 languages and used in 82 countries. All of these projects are designed to increase access to care for vulnerable populations.

MEDEX is especially proud of the deployment of 54% of its graduates to primary care practices, with 42% self-reporting service in medically underserved settings. Neither of these goals could have been achieved without federal funding, most recently the Title VII program. Federal grants have also included support for recruitment, student support, clinical site visits, new technology, program expansion, and faculty development. The recent reduction in Title VII funding nationwide creates new challenges for MEDEX activities. The success of MEDEX is a reflection of outstanding and mature second-career students, a talented and highly motivated faculty and staff, the flexibility of the ever-evolving MEDEX curriculum, the support from health sciences leaders at the University of Washington, the ongoing involvement of physician organizations, and the academic and community-based physicians who serve as lecturers and preceptors. In the years since Dr. Smith initiated his work on the MEDEX model, the key components of his system frame the history of MEDEX Northwest and continue to provide structure for new possibilities. MEDEX planning and implementation are always thought of in terms of the collaborative model, the receptive framework, and graduate deployment (Figure 2). MEDEX faculty are sought after as experts on competency-based training, which, combined with continuing education activities, allows clinicians to respond rapidly to the changing health care environment. Finally, the active involvement of practitioners — now including both primary care and specialist physicians — keeps the program in tune with strategic developments in care delivery and policy formulation.

In the words of Dr. Smith, “Transformation is a systems metaphor for change. It’s more process-oriented and more dynamic. It wasn’t a matter of training some people and sending them out into new jobs. We got into all types of communities; affluent, poor, middle-class; and that’s when we knew we had a success on our hands!”

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