Final Report Executive Summary

Retrospective Evaluation of The Duke Endowment's Nursing Workforce Grant Initiative

Prepared by

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Background

With a long commitment to health care infrastructure in North and South Carolina, The Duke Endowment became aware of a nursing workforce shortage in the late 1990s and responded. 2000 saw the first of several grants in this area and grant making has continued to the present day. Given the diversity of approaches employed by each grantee to address the nursing workforce shortage, a structured and standardized cross-site evaluation of the initiative was not deemed appropriate. Instead, grantees were asked to consider and report on key outcomes achieved that were specific to their local program and provide descriptive data about program activities and immediate outputs (e.g., numbers of nurses trained, type of training provided). In order to better describe and document the impact of this large initiative, however, The Duke Endowment embarked on a retrospective evaluation 2006, in collaboration with SAGE Partners, Inc., a professional services firm based in Asheville, North Carolina.

Thirty-four projects within 31 organizations were funded as part of TDE's nurse workforce initiative. TDE-funded projects included in the evaluation can be classified into three major categories: improvement of nursing infrastructure (4 grants), improvement of educational programs (26 grants), and improvement of work environment (4 grants). All grantees included in the evaluation were funded between the years 2001 and 2007, with a first year of funding on or before 2006. To date, the funding investment in these 34 projects totals over $18 million (over $2 million for infrastructure and work environment grantees, and $14 million to projects in the education program category). Awards have ranged from $16,800 for planning to $3 million for a new building. The average grant amount is about one-half a million dollars and the large majority of grantees received support for two to three years. The evaluation included eighteen grantees based in North Carolina and sixteen from South Carolina.

Overview of Evaluation Methods and Activities

Similar to many retrospective evaluations, we attempted to extract the best information from multiple available sources, as appropriate and feasible. A mixed method approach, this included collection of both qualitative and quantitative data, using a variety of methods and techniques. A short-term evaluation (~12 months), the design was necessarily streamlined. Data collection methods and data sources were selected carefully, in part to limit response burden for grantee sites (many of whom had already completed their grant-funded projects). The conceptual and organizational framework for the evaluation was carefully designed: we identified a set of 29 outcomes and goals organized into six outcome categories or groupings primarily through the review of published literature, and other select reports and data. After completion of this review and framework, we moved forward with collection and abstraction of data. There are four main sources of data for the evaluation: (1) review of documents submitted by grantee sites (e.g., grant proposal, interim progress reports); (2) brief, semi-structured phone interviews with key informants from grantee sites (usually two from each site); (3) a self-assessment survey completed by each grantee site; and (4) select secondary (existing) data elements. We sifted through all of these data sources to identify not just descriptive information about program activities, strengths, barriers, and lessons learned but also any information that could serve as evidence of achievement of key goals and outcomes.

Outcomes and Achievement of Goals

Below, we describe evidence of achievement based on data from document reviews, self-assessments, secondary sources, etc. We give each of the six outcome categories an evidence of achievement score (excellent, good/fair, poor/ no achievement, insufficient evidence/ info not available) and also list select examples of achievement. Please note that additional information about evidence and analytic methods can be found in the full report.

1. Education program/ nursing student outcomes (to develop and expand nursing education programs of all levels to increase their capacity to recruit, educate, and graduate a diverse (e.g., racially, ethnically, and by gender) group of qualified new nurses and prepare them for employment): **evidence of excellent or good/fair achievement.**

Examples of sub-outcomes (13) subsumed under this outcome category include: establish a new nursing education degree program; expand a nursing education degree; make changes to an existing program (e.g., improve quality of program, get program accreditation, implement new program standards, redesign or update curriculum, purchase technology for distance education); create new positions and/or hire new staff or consultants (e.g., hire nursing education consultant for tasks associated with program expansion; recruitment/retention specialist; program director); create new positions and/or hire new academic faculty (e.g., hire part-time/full-time faculty, hire new clinical instructors); provide resources or opportunities for staff and/or faculty development, continuing education, training, etc.; improve upon existing or develop new knowledge, attitudes, beliefs, skills, practices, among faculty and/or staff; increase diversity of student body (e.g., recruit, enroll, and retain minority students, low-income students, limited English proficiency students, etc.); improve student-related statistics (e.g., increase program enrollment, improve student retention, increase number of graduates); improve academic performance of students (e.g., improve student GPA, course pass/fail rates, performance on licensure exams, increase number/ percentage of students who passed their licensure exams the first time); improve community residents' access to nursing school (e.g., provide financial assistance); increase the number/percentage of job-seeking graduates who are placed in employment (local or elsewhere); and develop new/ improve facilities; purchase new equipment (e.g., training facilities, lab facilities, technology for distance education).

Select examples of outcome achievements

- In NC, applications, new enrollees and total enrollment increased by 18%, 72% and 63% respectively (2003 -2006) at TDE funded programs, compared to -.5%, 14% and 18% at all NC nursing programs.
- In NC nursing programs, the number of graduates from PNE, ADN and BSN programs increased by 30%, 28% and 33% respectively over the period of 2004 -2006.
- In SC, the number of enrollees at TDE funded LPN programs increased by 120%, while enrollment at non-TDE funded LPN programs decreased by 4% between 1999 -2005.
- In SC, the number of graduates at TDE funded LPN programs increased by 98%, while graduates at non-TDE funded LPN programs decreased by 14% between 1999 -2005.

2. Hospital/nurse employer outcomes (to expand the capacity of hospitals and other employers of nurses to improve the workplace environment for nurses, to recruit and retain a diverse [e.g., ethnically, racially, gender] nurse workforce, to decrease nurse vacancy/ turnover rates [and the costs associated with high vacancy/turnover rates], to increase the proportion of nurses who have

advanced educational preparation [higher nursing skill mix], and to improve the quality of patient care provided by nurses): **evidence of good/fair achievement**.

Examples of sub-outcomes (7) subsumed under this outcome category include: decrease nurse turnover rates or otherwise improve nurse retention; decrease nurse vacancy rates; improve upon existing recruitment strategies or implement additional recruitment strategies (e.g., work with local health agencies in recruitment and retention of nurses, decrease costs of recruiting nurses from outside the local area, provide scholarships to secure commitments from nursing students to work at their hospital); increase the number/percentage of nurses recruited/ employed from the local area; increase diversity of nursing personnel; purchase new equipment/ upgrade facilities (e.g., set up laboratory facilities); and improve the workplace environment for nurses (e.g., diversity awareness training, program to improve doctor/nurse relationships).

Select examples of outcome achievements

- From 2003 to 2006 annualized turnover rates for North Carolina grantee hospitals ranged from 11.6% to 15.6%. During the same period, turnover rates for North Carolina non-grantee hospitals ranged from 17% to 17.7%.
- From 2003 to 2005, vacancy rates for North Carolina grantee hospitals ranged between 4% and 7%. During the same period, vacancy rates for non-grantee hospitals ranged between 7.4% and 8.6%.
- The average number of days to fill a full-time RN vacancy (clinical) in NC hospitals was 7 to 20 days lower for grantee hospitals than non-grantee hospitals.

3. Hospital/educational institution partnership outcomes (to create and maintain strong relationships between nursing education programs and employers of nursing, and to develop and sustain collaborative efforts to alleviate the nurse workforce shortage): **evidence of good/fair achievement**.

Examples of sub-outcomes (2) subsumed under this outcome category include: enhance collaboration between hospital(s) and college(s) (e.g., increase regularity of communication, have better communication about trends, training for emerging clinical care needs, shared costs) and hospitals assist colleges with their clinical education (e.g. hospitals provide clinical sites for practicum/ provide rotations for nursing program).

4. Nursing outcomes (to provide nurses with the resources and skills that they need to confidently provide competent, quality care for patients, and to increase their job satisfaction): **unsure of level of achievement** (insufficient evidence; though existing evidence does suggest good/fair achievement).

Examples of sub-outcomes (4) subsumed under this outcome category include: provide nurses with professional development opportunities (e.g., create career ladder to facilitate nurses' career advancement; develop workshops for nurse managers; create networking opportunities for nurses/ nurse managers); improve upon existing, or develop new, clinical skills of nurses; increased confidence of nurses in delivering patient care; and improve the level/quality of patient care provided by nurses (e.g., nurses provide care within appropriate guidelines).

Select examples of outcome achievements

- The number of South Carolina nurses with a Masters degree grew by 57% over the 1996 -2005 period (from 4.5% to 5.7% of all nurses in the state).
- The number of registered nurses per 10,000 population in North Carolina increased from 78.79 to 91.95 over the period 1993 -2005. This is an increase of 17%.
- The number of registered nurses per 10,000 population in South Carolina increased from 65.6 to 73.6 over the period 2000 – 2006. This is an increase of 12.2 %.

5. Patient Outcomes (to ensure that patients have access to and receive high quality, culturally competent care, and to improve patient outcomes, including decreased morbidity and mortality rates): **unsure of level of achievement (insufficient evidence).**

Examples of sub-outcomes (2) subsumed under this outcome category include: improved health of patients (that is, reduced patient morbidity [illness] and/or mortality [death] rates) and higher patient satisfaction with care.

6. Community Outcomes (to improve community residents' access to nursing education and employment opportunities): **evidence of good/fair achievement**.

A single (sub) outcome is associated with this outcome category. It can be more fully described as efforts to "promote health careers and nursing careers in schools and in the community (e.g., health career pipeline programs in middle/high schools; public awareness via career fairs, websites, enhance image of health careers through speakers, meetings, etc.)."

Programmatic and Evaluation Strengths

- Reduce common barriers for prospective and/or current nursing students.
- Partners and stakeholders for nursing programs (e.g., local college, hospital, etc.) should collaborate and pool their resources.
- Hire experienced nursing instructors and faculty.
- Carefully design nursing programs through research, needs assessment and use of best practices.
- Utilize a single coordinator for nursing programs, someone who is adept in both academic and clinical spheres.
- Obtain senior management support from key agencies and partners at the outset.
- Recruit diverse stakeholders & partners (e.g., educational institutions, health care agencies, community agencies and representatives, etc.) to advise and oversee nursing programs.
- Increase general awareness about the nursing field while promoting specific, local programs.
- Implement a practical plan for local evaluation of nursing programs (e.g., use existing data where possible, store data electronically, use clear and measurable objectives).
- Recruit a diverse team to oversee and implement the evaluation; insist on regular evaluation communication across all partners and agencies.

Programmatic and Evaluation Challenges

- There is a severe shortage of qualified nursing instructors and faculty.
- Nursing education programs often lack needed funds to fully implement and then maintain programs.
- Enlisting the full participation of necessary partners in nursing programs is difficult.
- Nursing programs face many administrative barriers including resource allocation across multiple agencies, equitable assignment of clinical rotation spots at hospitals, slow decision making, and lack of agreement across agencies.
- Nursing students have many challenges and barriers to successfully completing their education (e.g., travel time, personal finances, family obligations, lack of prerequisite academic and study skills).
- The state of the art in nursing (and in medicine) is always changing and this makes it extremely difficult for nursing schools to stay up to date and train students using the latest technology and information.
- Nursing programs were challenged to identify appropriate outcomes for their programs and (feasibly) measure achievement of those outcomes.
- Many of the partners involved in nursing programs did not communicate adequately about evaluation and measuring achievement of outcomes.

Conclusions

- (Despite the limitations of this retrospective evaluation), there is good evidence of many achievements and successes in alleviating the nursing workforce shortage across the Carolinas.
- There are many types of valuable existing data that can and should be used to track changes in the workforce across the Carolinas. These data can and should be better combined, to examine these changes and to serve as the foundation of any future evaluation efforts.
- If appropriate/feasible, a standardized, cross-site, prospective evaluation would generate more comparable indicators of success across grantee programs.
- More work is needed to fully alleviate the shortage of qualified nurses in the Carolinas.
- There is a great deal of knowledge and expertise already present in the Carolinas, on alleviating the nursing shortage. This knowledge and expertise can and should be more widely shared.
- Although challenging, closer inter-agency collaboration and goal setting at local, regional, and state levels would benefit nursing workforce efforts. It is particularly important to clarify and differentiate between goals and outcomes that local entities can and should achieve (be responsible for) versus long term outcomes that perhaps should be the responsibility of larger entities and collaboratives.
- Policy change at the state level is likely to be the most widely beneficial change, impacting the greatest number of grantee programs, fiscal sustainability, and achievement of long-lasting change.

Recommendations

Differentiate between local and state/system level activities and resultant outcomes. We recommend the development of a state or regional level logic model (road map) for improving the nursing workforce shortage. Building off of the invaluable Institute of Medicine report and other resources, we strongly suggest making explicit the different inputs, impacts, and factors in play. While many grantee communities described long term goals such as "decreasing the nursing

shortage" or "improving patient outcomes," very few communities were able to identify local, feasible methods to demonstrate how student enrollment, for example, directly related to these broad goals. It may be necessary to hold regional coalitions responsible for these long term outcomes instead of looking to individual communities to generate definitive proof of these larger goals.

Focus funding on state level activities/programs, especially any system and policy change. While many local communities have demonstrated some success, there are overarching policies and legislative funding issues that hamper or constrain their efforts. Many new or expanded programs are forced to cobble together patchwork funding to maintain their programs (as initially supported by the Endowment). Without ongoing fiscal support from other sources, potential gains may be lost. Supporting policy change may result in the greatest impact and benefit for existing and new programs.

Specific ideas might include:

- legislative appropriations to support more funding to nursing schools, to hire qualified nursing faculty;
- a scientifically designed social marketing campaign to increase public awareness of the need for nurses, benefits of a nursing career, and to remove stigma and gender biases associated with nursing (this could include a state wide campaign as well as informational resources and packets that can be easily used by local communities);
- a competitive scholarship program for promising nursing students; and
- a competitive faculty awards program including endowments of key faculty positions.

If state system level change is not feasible, incentivize regional level coalitions and goal setting. As described above, many key goals can only be met through a combination of efforts and the Endowment should consider funding regional coalitions who can demonstrate proof of their ability to work together as well as proof of their accomplishments (e.g., hold a multi-county area responsible for changes in nursing vacancy rates at local hospitals and health care agencies).

Funding might be used to:

- support experienced and adept regional coordinators who can effectively liaise across academic and clinical organizations;
- encourage joint employment of nursing faculty (combination of teaching and clinical responsibilities, funding shared by local health care agencies and colleges); and
- flexibly support a variety of community needs (via local hospitals as grantees) but ask that hospitals, in return, each contribute a certain percentage of their revenues to supporting health careers (specifically nursing) in local communities. Ask that they submit standardized indicators such as number of clinical slots offered to local colleges, scholarships, preceptorships, mentoring, etc.

Convene a task force of key data partners and incentivize further collaboration among them. We strongly recommend that leaders in the area of nursing workforce development collaborate via strategic data partnerships so that secondary data can be more feasibly and directly applied - to support local evaluation efforts and to help describe the impacts of regional initiatives like this one. These data are invaluable and could be better applied and utilized, at multiple levels. Data include health workforce information such as vacancy rates and numbers of professionals actively employed, numbers of students graduated, state exam pass rates, etc.

Implement a standardized, cross-site evaluation plan among future Endowment grantees. Develop an evaluation advisory committee with local representation (small and large colleges, rural and urban areas, hospitals, health care agencies) as well as representation from key data partners (e.g., state level agencies and associations such as the state board of nursing, state university system) to both design and oversee the evaluation. Work to standardize collection and submission of key data (from local communities and schools) to these data partners. Insure that data are made widely available in various easy to understand and use formats. Use these secondary data sets as the basis or foundation of any Endowment evaluation efforts. Any additional data collected should both aid ongoing program monitoring and improvement and also make a business case for nursing workforce efforts (e.g., demonstrate return on investment).

Provide technical support and capacity building to grantees in the areas of data collection and data use, as part of the cross-site evaluation. This might include consultation on how to measure long term outcomes, when to decide if long term outcomes are appropriate, how to engage lay persons and diverse stakeholders in evaluation design and conduct, how to use evaluation for multiple purposes (e.g., practical application and use of information at the local level), and how to budget for data collection and evaluation.

Support the compilation, dissemination, and active use of already available information on improving the nursing workforce shortage. There is a plethora of information in the Carolinas and across the US that should be made more directly available to local communities. Some grantees indicated that their programs benefited from a careful assessment of community and stakeholder needs, use of well-tested and "evidence-based" approaches, site visits to successful programs and partnerships, and reliance on expert consultants, professional associations, state agencies, and other organizations and coalitions. Many communities are at least vaguely aware of these resources but do not have the time or ability, however, to cull out the best/most useful information and figure out how best to use, apply, and otherwise operationalize that wisdom at the local level. Further training, technical assistance, information dissemination, and relationship building should be explored as ways to disseminate this information. Specific possibilities include regional conferences, listservs, Websites and bulletin boards, joint publications in journals, exchange of faculty (visiting faculty), regional scholarships and endowments, professional awards, peer to peer mentoring, bibliographies, newsletters, and on-site technical assistance by consultants (e.g., as tailored to the needs of a particular community). For example, we would encourage communities to submit articles for publication, whether via newsletters or refereed journals. Before TDE or others plan and implement any workshops, meetings, or related support, however, we strongly suggest that communities be polled in advance (e.g., regarding preferred types of interaction and support, select media and means, and key foci or content areas). This will help insure that any events or offerings are well attended and meet the needs of busy nursing professionals.

Thanks and Acknowledgements

It is has been our privilege to work with the Endowment, the capable and energetic grantee staff, and other professionals in the area of nursing workforce development, all of whom contributed greatly to the compilation of information found in this report.

Notes, Caveats, and Other Information Available

Given the lack of standardized data across sites and the varying levels of data completeness, care should be taken in extrapolating from these findings or making any sweeping judgments or assumptions. A standardized, cross-site evaluation with clear definitions of each outcome, indicator, and methods of measurement (if deemed appropriate and feasible for the next phase of this grant initiative), will generate additional evidence of achievement and facilitate comparison across grant programs and communities.

The full text of this report is available, through the Endowment. There are several key appendices to this report that may amplify and provide additional information. These appendices include the following:

- the results of the literature review and a list of key references;
- a compilation and summary of the secondary data (represented in a series of tables);
- specific results of the interviews including more information on methodology and analysis;
- specific results of the self-assessment surveys completed by grantees including more information on methodology and analysis;
- more information about the document review, methods, and analysis conducted; and
- a data matrix summarizing, in tabular format, the existing data elements from each data source that are germane to each of the six outcome categories (29 outcomes organized into six categories).