The Kate B. Reynolds Smoking Education Lifestyle Fitness Improvement Program:

Preventing and Reducing Chronic Disease in Low-Income North Carolina Communities

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Seven of every ten Americans die from chronic disease. Uncontrolled chronic diseases result in premature disability, diminished functional status, and diminished quality of life. They account for more than 75% of medical care expenditures.[1] The effects of chronic disease can be prevented or controlled by changing three health behaviors: smoking, poor nutrition and physical inactivity.[2]

North Carolina consistently ranks poorly on these behaviors. More 60% of adults in NC are overweight or obese, and the prevalence of obesity and overweight is greater in minority populations. Only 37.6% of NC residents receive the recommended amount of physical activity,[3] and 22.6% of adults smoke.[4]

The Kate B. Reynolds Charitable Trust launched the SELF Improvement Program in 2001, offering to fund community-based organizations and their local partners to reduce and prevent chronic disease in low-income North Carolina residents. The Trust's goals were to change the perception of chronic disease and its complications from inevitable to preventable, develop sustainable collaborative community-based services to increase physical activity, improve nutrition, and curb or eliminate tobacco use. SELF Improvement built on the understanding that health promotion strategies that incorporate multiple interventions based in the community have been more successful than those targeting individuals.[5,6]

The Trust committed $10 million to SELF Improvement and contracted with the Department of Community and Family Medicine, Duke University Medical Center, to administer the program. The Trust and the Duke team established an advisory board to review the requests for proposals and select grantees to be funded. SELF Improvement represented the largest and longest single commitment by the Kate B. Reynolds Charitable Trust in its history.

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Project Selection

The Request For Proposals (RFP) targeted traditional health organizations as well as non-traditional organizations, such as

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United Way and Parks and Recreation Departments. Per the Trust's indenture, projects had to serve low-income North Carolina residents. The RFP requested collaboratively developed, multi-level, community-based interventions to improve nutrition, physical activity, and prevent tobacco use. Applicants were asked to document active involvement of the target population in program planning, willingness to submit data and participate in ongoing program evaluation, commit to attend statewide meetings to review progress, share lessons learned, and engage in mutual problem solving.

Selected Projects

All projects applied community-based models to help low-income, underserved North Carolinians change their lifestyles to prevent and reduce chronic disease. Each project built on the resources and characteristics of its region and culture, and each was unique in its approach to prevention of chronic disease. Each project targeted the community at multiple levels, using a variety of strategies. While not strictly categorized, projects have been organized by primary target audience as described below.

Schools

Illustrative school-based projects have targeted and attempted to change health behaviors in students, teachers, parents, and staff, modified how meals are prepared for children, and altered the tools teachers use to deliver a "standard" curriculum.

- In Dare County, PEER Power, a partnership between the Health Department and the schools, high school students were trained as peer health educators to help other elementary and middle school students learn the importance of physical activity, smoking cessation, and good nutrition.
- In Swain County, the Health Department partnered with schools and the town of Bryson City to improve the nutrition of children as well as other residents. The program replaced fryers with ovens in the school cafeterias and built a community walking trail. Physicians distributed medication without charge to help participants stop smoking.

Community

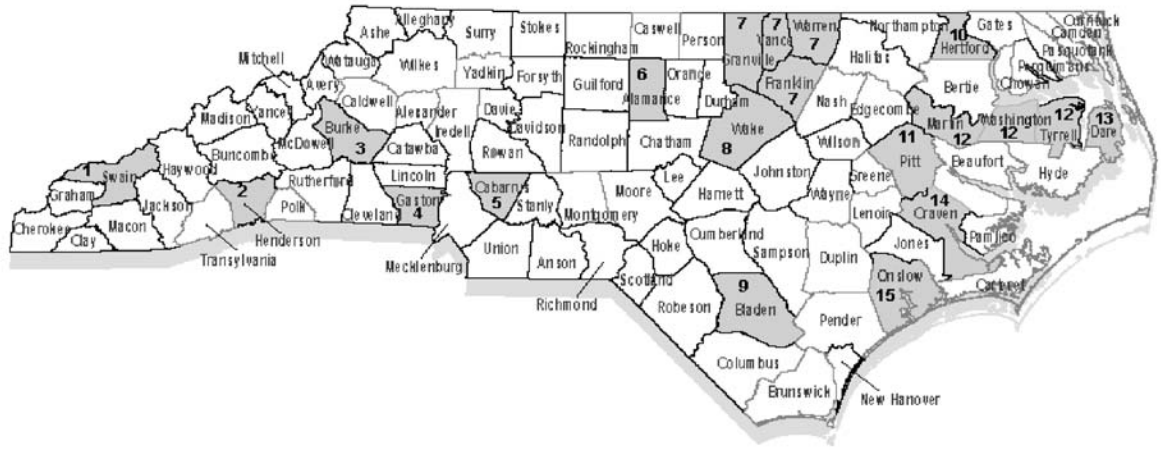
Community-based projects offered participants a mix of services designed to complement local culture and resources. Key strategies included: shopping and meal preparation on a budget, walking trails, individual nutrition and physical activity advice, and group classes.

- In Wake County, Strengthening the Black Family, Inc., organized activities through community leaders in three Wake communities. Families learned to prepare nutritious food that is culturally appropriate for African-American participants with a limited budget. The program also provided group physical activity and health screenings.
- Triangle E, located in Duffyfield, is a low-income, historically African-American neighborhood in New Bern. Churches convened Action Teams to assist the project, the Craven County Health Department provided health screenings, and the City's Parks and Recreation Department provided nutritional counseling and physical activity. The program was integrated in the long-range strategic plan for the city and officials expanded the program to all city employees.

Healthcare

Healthcare projects shifted the focus from providing care in hospital/clinic-based settings, to neighborhood settings more accessible and better able to meet community members' needs.

Figure 1.
Selected SELF Improvement Projects



1. Swain County Health Dept.
2. Partnership for Health
3. Burke County United Way
4. Gaston County Health Dept.
5. Cabarrus Health Alliance
6. Elon University
7. General Baptist State Convention of NC **
8. Strengthening the Black Family
9. Bladen County Hospital
10. Hertford County Public Health Authority
11. N.C. Agromedicine
12. Martin-Tyrrell-Washington Health Dept.
13. Dare County Health Dept.
14. New Bern, City of - Parks & Recreation
15. Onslow County Health Dept.

** Statewide, focusing on the four highlighted counties

Projects addressed barriers including; transportation, insurance coverage, language, culture, and access to primary care providers.

- In Alamance County, Elon University, Alamance Regional Medical Center, Alamance Community College, Centro La Communidad, International Family Clinic, and Piedmont Health Services collaborated on "SALSA" (**Sa**lud **L**atina, **S**alud de **A**lamance). Alamance Community College taught English to Latinos using a curriculum to reduce and prevent chronic disease. Exercise training centers were established in churches under the supervision of Elon University's Exercise Physiology Department.

Faith-Based Organizations

Faith-based projects ministered to the whole person (body, mind, and spirit). These projects tailored their strategies to recognize the effect of behavior and lifestyle, social and political conditions, spiritual and emotional states, economics, and environmental conditions on health.

- The Faith and Health Initiative of the General Baptist Convention of North Carolina, headquartered in Durham, is based in four of North Carolina's poorest counties: Granville, Franklin, Vance and Warren. The initiative included 88 churches with more than 19,000 members. This project trained 136 lay leaders to serve as Faith and Health Advocates to motivate and mobilize church members to improve their diet and increase their physical activity. The program provided congregational education and nutritionally appropriate food choices at church events. Many participating churches established walking trails on their grounds.

Implementation and Ongoing Technical Assistance

A critical part of SELF Improvement was the development of partnerships with state agencies to provide additional technical assistance. The North Carolina Department of Public Health offered grantees ongoing support to develop sound nutrition programs, increase participants' physical activity, and decrease smoking. This partnership assured that SELF Improvement would complement not duplicate state-funded efforts.

Grantees developed detailed action plans with community partners to guide their work, delineating project activities, partner roles, costs, and timelines. Grantee partners were involved in the creation and implementation of the plan. These documents became the navigational road maps for the project and required endorsement by the "community," the Duke Management Team, and the Trust.

Data Collection

The Duke Management Team developed a comprehensive database to evaluate and record project activities/outcomes centrally, and to help grantees manage their projects. Questionnaires were developed using questions adapted from the Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Surveillance System (YRBSS). Program participants completed surveys describing changes in nutrition, physical activity and smoking behavior. Project teams recorded the amount and types of services provided in each community. Grantees submitted information quarterly to the Management Team for review and follow-up as needed.

Technical Assistance

To help grantees monitor progress and identify areas of weakness, the Duke Management Team created a quarterly score card system for each project. Score card reports provide a graphic display of progress toward each project's target goals and objectives outlined in the original proposal, including accomplishments, participation, and health behavior outcomes. Conference calls were conducted quarterly with each grantee to review progress and propose improvements.

Some projects struggled with gaps in leadership and staff turnover. The Management Team asked the Duke Center for Non-Profit Management, which provides classes in communities throughout North Carolina, to create a Certificate Program in Healthcare Leadership for the grantees. The new Certificate Program in Nonprofit Management provided opportunities for grantees to improve their management and leadership skills through local classes. As of June 2006, 23 staff members from 14 projects are enrolled in the Certificate program; one staff member completed the program; and two are enrolled in master's degree programs.

Results

SELF Improvement aimed for and achieved a broad reach across the state. More than one million North Carolina residents have received information on improving nutrition and physical activity, and on smoking cessation. More than 25,500 residents have engaged in individualized health promotion activities, including health assessments, counseling, classes, and case management. Combined outreach efforts from these programs have been extensive. Some of the outcomes in the most successful programs, which are far in excess of the overall program numbers below, will be the subject of future publications.

Tables 1 and 2 give an overview of participants' characteristics and the overall results from the 15 projects' interventions for nutrition, physical activity, and tobacco cessation. Data are not available for all participants, but overall, adults reduced BMI, increased physical activity, improved nutrition, and a small number stopped using tobacco. Increases in youth physical activity and nutrition were reported for the first two follow-up visits after administration of the baseline questionnaire. More detailed analysis of youth BMI will continue, although valid BMI data were not available for all projects.

Lessons Learned

The SELF Improvement Program just completed its fifth and final year of funding. Important lessons have been learned:

1 Lifestyle changes take time. The Kate B. Reynolds Charitable Trust found it useful to have offered grantees a five-year period in which to mobilize and integrate local resources and craft appropriate services.

Table 1.
Adult Participant Characteristics and Aggregate Results for 15 Projects 2001-2006

Participant Information		(n=7,480)
Age		Mean: 47 years 68% aged 26 - 65
Sex		
- Female		76%
-Male		24%
Race		
- African American		58%
- White		39%
BMI (At baseline)		
- Normal Weight		21%
- Overweight		30%
- Obese		49%
Changes in weight	**(from baseline)**	
1st Follow-up visit	(n=2,219)	-2 lbs.
2nd Follow-up visit	(n=1,019)	-2.3 lbs.
3rd Follow-up visit	(n=535)	-2.2 lbs.
Changes in BMI	**(from baseline)**	
1st Follow-up visit	(n=2,184)	-0.4 kg/m2
2nd Follow-up visit	(n=1,015)	-0.5 kg/m2
3rd Follow-up visit	(n=535)	-0.5 kg/m2
Moderate physical activity		
(all assessments: 11,028)		Mean: 3.1 days/week
Changes in days per week performing moderate physical activity (from baseline)		
1st Follow-up visit	(n=2,106)	+0.6 days
2nd Follow-up visit	(n=936)	+0.5 days
3rd Follow-up visit	(n=484)	+0.7 days
Current Smoking		
(all assessments: 9,179)		22.2%
Stopped smoking (from baseline)		
1st Follow-up visit	(n=1,908)	3.7%
2nd Follow-up visit	(n=912)	5.0%
3rd Follow-up visit	(n=497)	5.4%
Fruit intake		
(all assessments: 11,393)		Mean: 34.9 times/month
Increase in fruit intake (from baseline)		
1st Follow-up visit	(n=2,133)	+5.2/mo.
2nd Follow-up visit	(n=942)	+2.9/mo.
3rd Follow-up visit	(n=488)	+2.2/mo.
Vegetable intake		
(all assessments: 11,364)		Mean: 37.6 times/month
Increase in vegetable intake		
(from baseline)		
1st Follow-up visit	(n=2,132)	+3.2/mo.
2nd Follow-up visit	(n=935)	+2.4/mo.
3rd Follow-up visit	(n=486)	+3.1/mo.

2 Non-traditional providers in the community can be effective and successful in the delivery of community-based healthcare interventions.

3 Many grantees were unaccustomed to providing multi-level interventions, assuming "campaigns", health fairs, and media messages by themselves could change health behavior. Extensive technical assistance helped grantees broaden their scope of services and apply multiple intervention strategies.

4 Some grantees labored to recruit and retain talented program directors and project coordinators. Classes to build skills for

Table 2.
Youth Participant Characteristics and Aggregate Results for 15 Projects 2001-2006

Participant Information		(n=16,901)
Age		Mean: 8.9 years 93% K-5th grade
Sex		
- Female		49%
- Male		51%
Race		
- African American		55%
- White		38%
BMI (At baseline-based on z-scores)		
- Normal Weight		54%
- Overweight		18%
- Obese		26%
Moderate physical activity		
(all assessments: 43,645)		
Changes in days per week performing moderate physical activity (from baseline)		Mean: 2.7 days/week
1st Follow-up visit	(n=5,972)	+0.2 days
2nd Follow-up visit	(n=4,281)	+0.6 days
3rd Follow-up visit	(n=3,287)	+0.9days
Tried Smoking		
(all assessments: 10,713)		14.0%
Change in smoking status (from baseline)		
1st Follow-up visit	(n=5,939)	
2nd Follow-up visit	(n=4,277)	No change in youth smoking status
3rd Follow-up visit	(n=3,288)	
Fruit intake		
(all assessments: 15,691)		Mean: 45.9 times/month
Increase in fruit intake (from baseline)		
1st Follow-up visit	(n=5,964)	+0.3/mo.
2nd Follow-up visit	(n=4,281)	+0.2/mo.
3rd Follow-up visit	(n=3,288)	0.2/mo.
Vegetable intake		
(all assessments: 15,037)		Mean: 41.1 times/month
Increase in vegetable intake (from baseline)		
1st Follow-up visit	(n=5,966)	+0.5/mo.
2nd Follow-up visit	(n=4,279)	+0.5/mo.
3rd Follow-up visit	(n=3,288)	- 0.5/mo.

program leadership in local communities were motivational and improved core management capacity.

5 Overall, projects struggled to find connections to local medical practices. Although two projects built strong connections with practices, a sizable gulf exists between medical practice and community-based chronic disease prevention programs. Community agencies and medical practices need to partner with one another to effectively treat/prevent chronic disease. As practicing physicians struggle to help their patients make difficult changes in their lifestyle, it is worth remembering that doctors and patients are not alone, and that in many communities, help is already available.

6 Extensive training to help projects develop sustainability strategies helped grantees learn to think beyond the "next grant." Several grantees have found ways to generate income to sustain their services to under-resourced people outside of additional grant funding.

7 Creating and managing data was difficult for many grantees, although extensive and ongoing technical assistance helped. Electronic databases for all program activities enabled the Management Team to generate score cards to coach and supervise grantees so improvements could be made.

The SELF Improvement program has created a foundation upon which North Carolina communities can model effective interventions to reduce and prevent chronic disease. **NCMedJ**

APPENDIX A.
SELF Improvement Grantees

Bladen County Hospital
Project: ***HealthWatchers at School***
PO Box 398
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Burke County Health Department
Project: ***Pathways to Wellness***
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The Public Health Authority of Cabarrus County
Project: ***Healthy Lives, Healthy Futures***
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Barbara Sheppard
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Dare County Department of Health
Project: ***Peer Power***
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Debbie Dutton
Manteo Middle School
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Duttonde@dare.k12.nc.us

Elon University
Project: ***SALSA***
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Elon, NC 27244

Stephen Bailey
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Gaston County Health Department
Project: ***Gaston on the Move***
991 West Hudson Blvd.
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Bill Gross
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General Baptist State Convention of NC, Inc.
Project: ***GBSC Faith and Health Initiative***
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Hertford County Public Health Authority
Project: ***Healthy Hearts and Souls***
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Martin-Tyrrell-Washington District Health Dept.
Project: ***MTW Project Self Improvement***
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Plymouth, NC 27962

Judi Hoggard
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New Bern Recreation & Parks, City of
Project: ***Mission Triangle E***
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New Bern, NC 28563

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NC Agromedicine
Project: ***Growing Up FIT!***
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Partnership for Health
Project: ***L.I.F.T. (Lifestyle Initiative-Fitness & Tobacco)***
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Strengthening the Black Family
Project: ***Project Self Improvement***
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Swain County Health Department
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In low- and middle-income countries, urban planning, to improve hygiene and sanitation and reduce population densities and the transmission of the pathogens causing enteric infections, schistosomiasis and tuberculosis, should reduce the incidence of acute kidney injury and chronic kidney disease.17 At the same time, by promoting the development of parks, paths and efficient transport systems, urban planning could increase general levels.Â The effective prevention of chronic kidney disease will require engagement with the corporate sector, whose interests may be in conflict with those of public health.43 Novel strategies are required to create incentives for the corporate sector to promote public The Kate B. Reynolds Charitable Trust works to...Â â€œJobs follow talent, so policy makers should double down on investment in education and job training,â€ said Kit Cramer, CEO of the Asheville Area Chamber of Commerce. NC Influencers want more jobs, skills training â€" but tariffs lurk over economy.Â The Public School Forum of North Carolina Receives $412,500 from Kate B. Reynolds Charitable Trust to Create Trauma-Sensitive Schools in Eastern North Carolina Jun 21, 2018 RALEIGH, NC (June 21, 2018) â€" The Public School Forum of North Carolina is pleased to announce that it has received a grant t Published In. North Carolina Medical Journal. Volume / Issue. 67 / 4.