Creating Smaller Silos: An Analysis of North Carolina’s Journey to Chronic Disease Program Integration

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Abstract

This case study describes North Carolina’s initial efforts at chronic disease program integration, an emerging trend for blending individual categorical disease and risk factor programs into a single chronic disease prevention and control unit. In December 2007, states receiving substantial grant funds to prevent chronic disease through categorical programs were offered the chance to apply for participation in a Centers for Disease Control and Prevention (CDC) demonstration project to “increase synergy, reach and desired health outcomes in selected categorical programs” (J. Collins, personal communication, December 17, 2007). Over the three-year period which begins January 1, 2009, four states, including North Carolina, will enter into a negotiated agreement that gives them the freedom to share financial and human resources in ways that were not previously allowed. This paper describes the multi-year process that North Carolina forged in preparation for the negotiated agreement. This paper also includes a review of the lessons learned from previous multi-agency collaborative efforts that helped to guide North Carolina’s process. It includes recommendations for capturing lessons learned in a way that other states can replicate as well as indicators of progress towards the goal of integration.

Introduction

Chronic disease accounts for much of the death and disability in the 21st century, yet funds for its prevention and control are limited (Anderson and Chu, 2007). Federal and foundation funding
are more abundant for infectious disease prevention, bioterrorism and issues of maternal and child health. The U.S. Congress appropriates spending for chronic disease by specific disease categories, and the money is granted to states through competitive cooperative agreements with the CDC’s National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). The NCCDPHP is within the CDC Coordinating Center for Health Promotion, which reports directly to the Office of the Director of CDC. Dr. Janet Collins is the Director for the NCCDPHP.

Nationally, a state is considered to be fully funded for chronic disease and risk factors programs if it receives funding for the following programs: Behavioral Risk Factor Surveillance System (BRFSS), Comprehensive Cancer, Diabetes Prevention and Control (DPC), Heart Disease and Stroke Prevention (HDSP), Physical Activity and Nutrition/Obesity Prevention (PAN), and Tobacco Prevention and Control. Only 21 states receive funding for all of these programs (J. Collins, personal communication, December 17, 2007). North Carolina is one of these fully funded states.

Due to the nature of independent funding streams, or silos, state chronic disease programs have traditionally operated with limited interagency collaboration (Brownson and Bright, 2004). Yet these programs address similar risk factors. Some generally accepted health facts are that people who have diabetes are just as vulnerable to heart disease as those who have previously had heart attacks. Smoking is a proven carcinogen, and is linked to heart disease. It also exacerbates circulation problems in people with diabetes, thereby increasing the likelihood of amputations. Physical activity, proper nutrition and weight management have been shown to reduce the incidence of type 2 diabetes, heart disease and some cancers. Since the science of chronic
disease prevention and control is so integrated, it follows that programs designed to address these issues should work together. In some states, that linking of risk factor programs has already begun as a trend to combine some business practices, program planning, intervention strategies, surveillance and data collection efforts across programs, as appropriate (Slonim et al., 2007). This emerging trend is called chronic disease program integration. Chronic disease program integration is a promising practice that does not yet have a base of evidence to demonstrate its effectiveness. In December 2007, Dr. Collins created a sense of urgency around integration by offering all fully funded states the opportunity to participate in a three-year integration demonstration project (Exhibit 1). The four demonstration states have been given the flexibility to create a new work plan that emphasizes interagency collaboration. This new work plan, or negotiated agreement, will take the place of previous work plans for the six participating programs: BRFSS, Comprehensive Cancer, DPC, HDSP, PAN, and Tobacco Prevention and Control. The states, Colorado, Massachusetts, North Carolina and Wisconsin, may now share positions across the above program areas, conduct shared strategic planning; and, jointly plan, conduct and evaluate interventions. The only caveat is that programs must be able to demonstrate loyalty to the intent of the Congressional appropriation. For example, diabetes dollars can be used to help with the tobacco Quitline, but the DPC must show how the Quitline serves people with diabetes.

This paper will review North Carolina’s efforts at chronic disease program integration as a case study analyzing planning and implementation strategies, barriers and facilitators. This paper will specifically add to the body of knowledge regarding evaluating organizational change,
particularly with recommendations for indicators of progress, and will suggest areas for future study.

**Literature Review**

*What is chronic disease program integration?*

Some of the ways that agencies can be integrated are through purpose, method of service delivery, or scope (Institute for Research on Poverty, Corbett and Noyes, 2008). Program integration has been described as a continuum from sharing information only when it is advantageous to either program to being fully linked. A fully linked initiative involves mutual planning, shared staffing and/or funding resources and evaluation of activities to accomplish common goals (National Association of Chronic Disease Directors [NACDD], 2004). The North Carolina chronic disease program integration definition is the “strategic alignment of resources for meaningful change” (Salinsky and Gursky, 2006).

*A framework for integration.*

Multiple theoretical influences form a framework for integration. The World Health Organization introduced the Ottawa Charter for Health Promotion in 1986. This charter emphasizes the active pursuit of health promotion across all levels of the socio-ecologic model. The Ottawa Charter promotes health promotion at the individual level through education and self-management and at the interpersonal level by creating supportive environments so that individuals are empowered to take care of their health. The charter promotes health promotion through organizations, such as hospitals by applying professional standards of care; through
communities by changing the culture of neighborhoods such that health promotion is the norm; and through public policy by removing barriers to health such as adding sidewalks (Debe, 2004). The Ottawa Charter influence on integration can be seen in the guidance CDC gave states when developing their Integration Work plans. CDC encouraged states to set goals that addressed chronic disease prevention through policy and environmental change and systems change at all levels and in consideration of the social determinants of health (J. Collins, personal communication, 8/15/08). The Chronic Care Model, developed by Ed Wagner, Director of the MacColl Institute for Healthcare Innovation, Group Health Cooperative of Puget Sound, is a multi-faceted approach to improved health outcomes that incorporates community, the health system, self-management support, delivery system design, decision support and clinical information systems. Each element contains strategies to foster improved interactions between patients and providers that should lead to improved health outcomes. The Chronic Care Model influences Chronic Disease Program Integration because they both require coordination across multiple systems to be effective (Wagner, et al, 2001). In addition to these general influences, a specific framework for chronic disease program integration was developed during a 2006 meeting between the NACDD and the NCCDPHP (Slonim, et al., 2007). The participants recommended several guiding principles for program integration including “do no harm to categorical program integrity; clearly identify and state mutual benefits and opportunities; be guided by efficiency-oriented processes; be focused on health outcomes; evaluate integration outputs and health outcomes; engage stakeholders; and, mobilize leaders” (Slonim, et al., 2007)

Dr. Collins met with all the demonstration states in July 2008 and described chronic disease program integration as a “long-term strategic direction that will be a model for the nation”
(personal communication, July 16, 2008). The framework that will ultimately guide North Carolina’s integration process was decided at that meeting. This framework is based on public health policy at the personal, community and societal levels of influence. It emphasizes long-term goals with consideration given to health disparities and social determinants of health (social and economic conditions that effect health) with emphasis on preventing chronic disease risk factors, early detection and control of risk factors, identification and appropriate treatment of chronic disease, and preventing recurrent events and complications (J. Collins, personal communication, July 16, 2008).

Benefits and barriers to program integration.

In a 2003 survey, 151 state health promotion, chronic disease and tobacco program managers listed numerous benefits to program integration, especially shared resources and information, increased budget efficiency, increased harmony among staff and decreased redundancy across programs (NACDD, 2004). They also listed many barriers, including decreased access to specialized personnel and historical failures of integrated efforts. Specific concerns also emerged around diffusing the tobacco policy focus and increased competition for media attention (NACDD, 2004). Tables one and two show the top five factors that promote and impede integration based on the survey results.
Table 1  
**Top Five Factors that Promote Linkages (predisposing and enabling factors)**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Program outcomes are better</th>
<th>Synchrony of effort (minimizes the silo effect)</th>
<th>Improved strategic planning</th>
<th>Inter-personal relationships</th>
<th>Increase in systems management approaches for disease control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranking</td>
<td>Not at all + A Little</td>
<td>Some + A lot</td>
<td>Total Responses</td>
<td>Not at all + A Little</td>
</tr>
<tr>
<td>1</td>
<td>13%</td>
<td>86%</td>
<td>146</td>
<td></td>
<td>21.9%</td>
</tr>
<tr>
<td>2</td>
<td>84.1%</td>
<td>15.8%</td>
<td>145</td>
<td></td>
<td>84.1%</td>
</tr>
<tr>
<td>3</td>
<td>21.9%</td>
<td>78.1%</td>
<td>146</td>
<td></td>
<td>24.3%</td>
</tr>
<tr>
<td>4</td>
<td>24.3%</td>
<td>75.7%</td>
<td>144</td>
<td></td>
<td>24.3%</td>
</tr>
<tr>
<td>5</td>
<td>24.5%</td>
<td>75.7%</td>
<td>143</td>
<td></td>
<td>24.5%</td>
</tr>
</tbody>
</table>

Table 2  
**Top Five Factors that Impede Linkages (barrier factors)**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Categorical funding streams &amp; accountability</th>
<th>Competition for program/protection of turf</th>
<th>Loss of program identify/status</th>
<th>Loss of programmatic focus on outcomes</th>
<th>Loss of constituency for programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27.8%</td>
<td>38.6%</td>
<td>38.7%</td>
<td>44.6%</td>
<td>45.8%</td>
</tr>
<tr>
<td></td>
<td>72.3%</td>
<td>61.3%</td>
<td>61.2%</td>
<td>55.5%</td>
<td>54.2%</td>
</tr>
<tr>
<td></td>
<td>144</td>
<td>145</td>
<td>147</td>
<td>146</td>
<td>144</td>
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</tbody>
</table>

Another fear surrounding chronic disease program integration revolves around funding. In order to keep pace with changing trends, public health is encouraged to combine categorical funding streams for prevention programs while maintaining disease specific control programs (Brownson and Bright, 2004). The purpose of the former is primary prevention and secondary and tertiary prevention of death and disability is the purpose of the latter. Funding both types of programs forms the basis of a comprehensive chronic disease prevention and control program. In 1966, the
Johnson administration introduced block grants as a way for the federal government to promote new spending in the areas of safety and health (Urban Institute, Finegold, Wherry, and Schardin, 2004). Block grants continue to be a method of distributive federalism that is not subject to the requirements of entitlement programs like Medicaid and Medicare. An important difference between entitlement funds and block grants is that block grant amounts can be set at the beginning of the budget process because Congress generally appropriates money for a broad line item such as health promotion. States can decide which health promotion activities they wish to pursue. Entitlement funds must be flexible enough to accommodate every person who is legally eligible to access services, e.g., Veterans Administration healthcare services. A review of block grant funding showed that while funds to states initially increase when funds are transitioned to block grants, the overall appropriation eventually decreases as Congress imposes additional regulations that follow constituent interests and in response to micro-economic conditions (Urban Institute, Finegold, Wherry, and Schardin, 2004.). The fear that relates program integration to block grants is that funds used to finance interventions across programs will cause members of Congress to appropriate the funds in a block grant instead of around categorical programs.

Perhaps the biggest barrier to integration is that it is a significant shift from the current practice. Presently, the six programs that will work together in the negotiated agreement share no staff, have no joint requests for proposals to the local health departments, and conduct independent interventions, sometimes in the same community. For example, Diabetes, PAN and HDSP use the same basic computer system to track local health department activities. However, the systems are not able to generate a state level compendium of local health department activities.
Moreover, the technical assistance provided to local health departments on the use of the system varies with each program. Ron Chapman, MSW, a management consultant whose clients include CDC, specializes in organizational change. At the July 16 meeting in North Carolina, Chapman likened categorical disease program managers to entrepreneurs, and the integration process to a merging of these entrepreneurs into a corporation. While entrepreneurs develop products, manage delivery and evaluate effectiveness independently, corporations benefit from economies of scale and the opportunity to increase market share by eliminating redundancy in procedures (R. Chapman, personal communication, July 16, 2008). According to the guiding principles in the Slonim, et al. essay, integration offers these same benefits. “Efficient program integration actions should leverage human resources, use time and dollars wisely, avoid duplication of effort and build on common program interests and objectives” (Slonim, et al, 2007). While program integration may yield the benefits, described above, its inculcation will be a significant organizational change.

**Leadership and Program Integration**

Leading program integration will be a challenge. Jim Collins, a former professor at the Stanford Business School, and author of *From Good to Great Why Some Companies Make the Leap*, wrote that “good is the enemy of great.” Program integration could be similar in that good categorical programs may be the enemy of a great chronic disease prevention and control program. Collins and his team researched Fortune 500 companies for five years in order to distill the secret to sustained organizational change into three main concepts: disciplined people, disciplined thought, and discipline actions (Collins, 2001). Each concept is broken into two parts and each part has various ingredients for success. The main message of *From Good to Great* is
that leadership embodying certain concepts can take a company from average profits (good) to sustained profitability (great). The essential elements seem to be: highly evolved leadership (termed level 5), ideal staffing (getting the right people on the right seats on the bus and the wrong ones off the bus), a concentrated focus on one big thing (the hedgehog concept), and tenacity (the flywheel concept) (Collins, 2001).

Harvard professors Ronald A. Heifetz and Marty Linsky include various practical tips for leaders during times of organizational change in their book *Leadership on the Line*. Some useful guidance for integration from this work includes strategies on controlling how much change the staff can handle at any point, referred to as “controlling the temperature,” and separating (oneself) briefly from all of the chaos in order to see the bottom line, termed, “getting on the balcony” (Heifetz and Linsky, 2002).

During this period of intense organizational change, the leaders may have to draw on their emotional intelligence, which combines high levels of self-awareness with participatory management, and high levels of social competency (Goleman, Boyatzis and McKee, 2002). They may also need to take care of themselves through daily breaks from high level decision making as recommended in the book, *Primal Leadership*. Goleman, McKee and Boyatzis, recommend that leaders seek “sanctuary” on a daily basis. Seeking sanctuary involves taking time to clear one’s head. Two examples are taking a walk and reading an article for enjoyment. This allows a leader a brief respite from high-level decision making, to be restored (Goleman, McKee and Boyatzis, 2002). *Resonant Leadership*, by Boyatzis and McKee, expanded the idea of sanctuary with the concept of a cycle of sacrifice and renewal (2007). The cycle alternates periods of intense work followed by periods of relaxation that allows leaders the rest needed to
come back refreshed and ready to take on more tasks (Boyatzis and McKee, 2007).

Recommendations for integration.

The Slonim essay includes specific recommendations for chronic disease program integration for state health departments, the CDC and the NACDD. The state health department recommendations include: engaging leadership, developing cross cutting epidemiology and surveillance programs, leveraging the use of information technology, building state and local partnerships, developing integrated state plans, engaging management and administration; implementing integrated interventions and evaluating integration interventions (Slonim, et al., 2007).

Previous integration efforts provide many best practices for integration including a suggestion that chronic disease integration can best be accomplished through the work of multidisciplinary teams that work across program boundaries (Axelsson, R. and Axelsson, S.B., 2006). Team effectiveness depends heavily on the team’s ability to move through the developmental stages of forming, storming, norming and performing. Since the teams may operate on a matrix level structure instead of hierarchical, the success relies on the ability of the team lead to establish trust and effectively manage conflict (Alexlsson, R. and Axelsson, S.B., 2006) One way to help teams move through the developmental stages is to develop a charter that establishes ground rules for participation, assigns team roles and responsibilities and creates a plan for conflict management (Buhler, 2007).

Communities of Practice (CoP) is a term used in both the corporate and public sector to indicate specialized teams that form around professional responsibilities. According to a report from
IBM, Communities of Practice can be distinguished from typical teams in 4 key ways: 1) they come into existence on their own instead of being formed by management, 2) leadership emerges rather than being assigned, 3) work plans are developed within the group as opposed to being assigned from management, and 4) team processes develop over time from within the group (Lesser and Storck, 2001). The value of the CoP is in increased social capital in the workplace because new employees feel instantly connected to a group, and in more efficient employees because shared lessons learned reduces and can eliminate work duplication (Lesser and Storck, 2001).

The NACDD survey yielded several suggestions for ways that program managers should proceed with integration. The recommendations include:

- Hold regular joint management meetings;
- Employ shared decision-making strategies;
- Engage in integrated planning activities where common goals and objectives are identified;
- Develop informal or formal working agreements that establish clear responsibilities for fulfilling collaborative objectives;
- Share information sources for more efficient use of funds and to identify common or intersecting program objectives; and,
- Develop interpersonal/professional relationships with program managers who have similar program outcome interests (NACDD, 2004).
In 1995, the CDC integrated its HIV, STD and viral hepatitis prevention services programs with its tuberculosis control program into one center. This change identified several recommendations to reduce barriers to integration for CDC that can be adapted for state use including: (1) ensure that funding opportunities contain standard elements for integration and indicators to measure program outcomes, (2) cross-train program staff to monitor program performance, (3) encourage joint site-visits; and (4) share lessons learned with partners (Ward and Fenton, 2007). Additional recommendations from this effort were reported through the Association of State and Territorial Health Officials (ASTHO) in 1998. The ASTHO report emphasizes integration efforts that are program-centered and are anchored by a planning council; policy-centered, which involves alignment with advisory bodies and stakeholders who have advocacy authority; and organization-centered which relies on “structural and functional reorganization and possible reorganization of lines of authority” (H. Fields, 1998).

The long-term impact of chronic disease programs is improved health outcomes at a population level. The CDC Community Guide to Preventive Services lists evidenced-based effective programs and policies. Some examples from the Community Guide include: increasing the tax on cigarettes to reduce smoking (CDC, 2007, para. 3) and implementing self-management programs to increase blood glucose control resulting in decreased diabetes complications such a blindness and amputations (CDC, 2007, para. 2). Currently there is no evidence that chronic disease program integration will improve health outcomes. This impact may emerge as chronic disease integration continues to be implemented. The existing evidence on cross-agency collaboration has demonstrated the opportunity for increased health outcomes and risk factor prevention (Alkema, Shannen and Wilber, 2003), yet documented results were not found with
multiple key word searches through various health databases, including *PubMed, Web of Science and the Cumulative Index to Nursing and Allied Health Literature*.

*Evaluation of program integration.*

Evaluation of integration remains a key concern. As the definition of integration changes, it is difficult to assign indicators and to measure success. Dr. Rebecca Gadja of the University of Massachusetts, Amherst, developed a tool to assess the strength of integrated interventions. This tool is the Strategic Alignment Assessment Rubric (SAFAR). The SAFAR, measures the level of integration based on four dimensions of collaboration: purpose; strategies and tasks; leadership and decision-making; and communication. Collaborative partners rate the quality of interventions using the dimensions above on a scale of 1 to 4 with level one describing dimensions that reflect elements of networking, level two is cooperating, level three is partnering and level four is integration (Gadja, 2004). The combined scores are combined and analyzed thus giving all participants an idea of what level of integration the activity reflected. North Carolina has adapted this tool, with permission from Dr. Gadja from five levels to the four previously described. The original level five was termed unifying and implied a level of complete loss of individual program identity that was not desired by program integration. The adapted SAFAR tool is shown in Exhibit 2.

The Wilder Corporation conducted an extensive review of research on collaboration. The review did not specifically address interagency integration, but it produced a tool, *The Wilder Collaboration Factors Inventory*, shown in Exhibit 3, which assesses a collaboration on elements of connectivity such as shared vision, mutual respect, and collaborative conflict resolution
(Mattessich, Murray-Close & Monsey, 2001). This tool is valuable for program integration because the values necessary for effective interagency collaboration are equally important for intra agency integration. Each partner completes an assessment form which can be scored by hand or online. Higher scores indicate achievement of connectivity, shared vision or mutual respect; lower scores represent room for growth. Collaborative partners can complete the inventory at the beginning of a partnership as a predictor of success, in the middle as a temperature check or at the end when distilling lessons learned.

*Evaluating organizational change.*

Program integration is predicated on organizational change to alter the status quo. John Kotter establishes some indicators for organizational change in his article, “Eight Reasons Why Transformation Efforts Fail,” published in the *Harvard Business Review* in 1995. Kotter lists the main ingredients for successful organizational change as establishing a sense of urgency, forming a powerful guiding coalition, creating a vision then communicating it, empowering others to act on the vision, planning for and creating short term wins, consolidating improvements and producing still more change, and finally institutionalizing new approaches. Kotter’s list provides a basic roadmap for integration that benchmarks the organizational change process.
Methods

The methods employed in this single case study are shown below:

<table>
<thead>
<tr>
<th>Research Question/Underlying Assumptions</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why initiate chronic disease program integration?</td>
<td>Review of NC categorical websites. Personal knowledge of events, review of CO’s offer to</td>
</tr>
<tr>
<td>Assumptions: program integration is the next inevitable step in the way chronic disease prevention and control is being practiced at the state level.</td>
<td>participate, focused interviews with Andrea Poiners who is the Deputy Director of the Chronic Disease Prevention Branch in Colorado and Sue Grinnell, the Director of the Community Wellness and Prevention Division of Community and Family Health in Washington</td>
</tr>
<tr>
<td>How is chronic disease program integration changing the way we conduct administrative tasks?</td>
<td>Literature review, focused interviews with Andrea Poiners and Sue Grinnell, 2007 survey data from the NC CDI section; 2008 survey data from Washington</td>
</tr>
<tr>
<td>Assumptions: program integration will provide the infrastructure to increase communication and help us leverage economies of scale.</td>
<td>Focused interviews with Andrea Poiners and Sue Grinnell, and other personal communication</td>
</tr>
<tr>
<td>How is chronic disease program integration changing the North Carolina Chronic Disease and Injury Section organizational chart?</td>
<td>Literature review, focused interviews with Andrea Poiners and Sue Grinnell, and review of NC CoP plans</td>
</tr>
<tr>
<td>Assumption: program integration creates the benefit of a more effective and efficient organization.</td>
<td></td>
</tr>
<tr>
<td>How is chronic disease program integration changing the way we implement programs?</td>
<td>2007 and 2008 survey data from the NC CDI section; 2008 survey data from Washington</td>
</tr>
<tr>
<td>Assumptions: program integration will help us focus on outcomes and work together in ways that are more efficient.</td>
<td></td>
</tr>
<tr>
<td>How is the organizational culture of the North Carolina Chronic Disease and Injury Section changing because of chronic disease program integration?</td>
<td>2007 and 2008 survey data from the NC CDI section; 2008 survey data from Washington</td>
</tr>
<tr>
<td>Assumption: program integration creates the benefits of a cohesive environment where employee production, satisfaction and retention is high.</td>
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</tbody>
</table>
The unit of analysis for this case study is the N.C. Chronic Disease and Injury (CDI) Section that consists of multiple branches/programs. NC programs that have cooperative agreements with CDC and have more than one permanently assigned staff member are listed here: Asthma, Breast and Cervical Cancer Education Program (BCCEP), Comprehensive Cancer Control (Comp Cancer), Diabetes Prevention and Control (DPC), Forensic Test for Alcohol (FTA), Heart Disease and Stroke Prevention (HDSP), Injury and Violence Prevention (Injury), Physical Activity and Nutrition/Obesity Prevention (PAN), the State Center for Health Statistics which houses the Behavior Risk Factor Surveillance System (BRFSS), and Tobacco Prevention and Control (Tobacco). The Section leader is Marcus Plescia, MD, MPH. His Senior Management staff consists of a CDC Assignee who works primarily in policy, an Operations Manager who leads administrative planning for the section; a Health Promotion Manager who supervises FTA, Injury, PAN and Tobacco; and a Chronic Disease Manager who supervises Asthma, BCCEP, Comp Cancer, DPC and HDSP. The Chronic Disease Manager was Janet Reaves who died unexpectedly in February 2008. A new Chronic Disease Manager will start in December 2008. The two states observed in lesser detail are the Washington Community Wellness and Prevention Division of Community and Family Health, and the Colorado Chronic Disease Prevention Branch. Exhibits 4-6 contain the organizational charts for all three programs. Exhibit 7 shows the questions that were asked during the focused interviews.
Summary of Findings

Why initiate chronic disease program integration?

North Carolina receives financial awards that fall within the highest levels of funding in each of the disease and risk factor categories. No program, including BRFSS, receives less than $350,000. This federal funding pays for staff positions and funds to implement programs. North Carolina was one of the first states to have a stroke registry, and one of the first states to have an obesity burden document. The tobacco program has been praised for achieving 100% tobacco free schools in all 115 local school systems despite being a state that derives some of its economic gain from tobacco. North Carolina is the first state in the nation to offer a multi-site diabetes education recognition program that local health departments can use to bill for self-management services. The North Carolina chronic disease programs are successful on their own. So there seems to be little reason to integrate and previous experiences with cross program collaboration have met with mixed success. A successful example was the chronic disease collaborative that focused on improving healthcare systems based on implementing the chronic care model in primary practices throughout the state. Diabetes, HDSP and Comp Cancer provided funds for this initiative, which continues in the form of a national quality improvement initiative known as Improving Performance in Practice. Improving Performance in Practice is a Robert Wood Johnson funded project that includes diabetes, HDSP, Asthma and Tobacco Prevention and Control. The lesson learned from this initiative is that interventions focused on health outcomes facilitate collaboration. An unsuccessful attempt at cross branch collaboration involved the sharing of a system to track policy and environmental change at the local level. HDSP developed a system, Progress Check, that diabetes and PAN adapted. Keeping up with
the changes became a chore along with concerns over maintaining the integrity of the logic model and after a failed attempt at establishing memoranda of agreement; each branch renamed the program after their branch, and made changes independent of one another. The lesson learned was that joint work without resources for joint planning and implementation causes resentment and inhibits collaboration.

The foundation for North Carolina’s current integration efforts began in 2004 with the hiring of a Chronic Disease Manager. This position was created to look for opportunities to coordinate services among the chronic disease programs. The position is funded through a portion of each of the categorical program’s CDC cooperative agreement funds. A parallel position to manage health promotion was created in 2006 and is financially supported through funds from the programs that receive its supervision. In May 2007, North Carolina conducted its first Chronic Disease Conference, which represented the first time that all of the programs came together to produce a joint conference. The Chronic Disease Manager put together a multi-branch, multi-disciplinary team to develop a chronic disease strategic plan that eventually became the Integration Blueprint published in February 2008. Since becoming a CDC demonstration state, North Carolina has developed four multi-branch Communities of Practice (CoP) that conduct integration work in the areas of evaluation and epidemiology, policy and environmental change, community-based health promotion and healthcare systems. North Carolina’s integration efforts are diffused through a core integration team, which includes the section chief, the section senior management team and three program employees. The core team provides the momentum for integration and they lead the CoP’s. The section management team members supervise the program staff who participate on the CoP’s and conduct their assigned categorical roles.
North Carolina’s overall interest in integration was fueled by a desire to guide the process. The other two states approached integration in a different way. Colorado began integration in 2006 with a phased approach based on reorganization recommendations from a consultant. In the first phase, they consolidated obesity, asthma, arthritis, and oral health into one center and created three units to serve needs across the Division. The three units brought together certain functions that were housed in specific programs including epidemiology, planning and evaluation; fiscal and contracting staff and a training center that addressed workforce development issues such as cultural competency and health literacy (A. Poiners, personal communication, 9/24/2008). In addition to the reorganization, chronic disease funding in Colorado increased substantially through State Amendment 35 that increased the state’s tobacco excise tax and assigned the revenue to various health functions. According to Colorado’s offer to participate in the CDC pilot, “since January 2005, the Department has received about $50 million per year toward the following goals: 1) tobacco prevention, education and cessation; 2) prevention, detection and treatment of cancer, cardiovascular disease and pulmonary disease; 3) expansion of breast and cervical cancer screening services; and 4) reducing health disparities. Ninety-five percent of funding appropriated to the Division is awarded in grants to a wide range of state and local organizations for interventions in these areas.”

The second part of Colorado’s integration implementation was the creation of a position to coordinate integration, which occurred in September 2007. This position focuses on integration and supervises some chronic disease program managers.

Washington began their integration efforts when their current chronic disease manager was hired in 2006. The manager, Sue Grinnell, came to the state department after serving as a local health
director. As a local health director, Grinnell saw the need for the state department categorical chronic disease programs to work together more efficiently particularly around areas of technical assistance to local health department staff. (S. Grinnell, personal communication, September 22, 2008). Upon her arrival in December 2006, Grinnell began a process of appreciative inquiry with the staff and local health directors. Appreciative inquiry is a business strategy that emphasizes positive organization assessment through four D’s: Discover (what is already working), Dream (imagining what an organization could be), Design (prioritization of the results from the previous step) and Destiny (articulation of a vision that was created with input from multiple sources (Gaddis and Williams, 2008).

She and her team first created a set of values for their agency, and then divided their work into quality improvement teams. The teams integrated work in eight areas: administrative, fiscal, policy and epidemiology, communications, schools and workplaces, healthcare, health equity, and healthy communities. Each team developed a charter based on a structure and outcomes chart drafted by Grinnell and adopted with input from the entire senior management team. A business plan guides integration efforts by delineating expected outcomes inputs and outputs. It is similar to a logic model. Washington’s business plan model is shown in Exhibit 8 and North Carolina’s integration logic model is shown as Exhibit 9. Washington also has a person who monitors integration efforts and supervises other program managers.
How is chronic disease program integration changing the way we conduct administrative tasks?

Integration requires a certain amount of infrastructure. In North Carolina, staff are spread out over three buildings on one campus and the State Center for Health Statistics in a different part of the city. Large documents are not able to be transmitted via the e-mail because of band width limitations and there is no joint server. In addition, all integration documents, including action plans, are stored on the computers of each CoP team lead, which requires e-mails with multiple attachments when documents like the action plans are referenced. This lack of infrastructure has inhibited communication. Both Sue Grinnell and Andrea Poiners said that establishing an intranet facilitates internal communication (Personal communication, 9/22 and 9/24, 2008, respectively). Washington has had one for a while, and Colorado instituted one in September 2008. North Carolina developed a listserv that reaches all CDI staff regarding integration updates and has plans to implement an intranet. The epidemiologists and evaluators in North Carolina established a wiki that allows them to share editing privileges to a database of commonly used data sets via the internet. Leveraging use of information technology was a recommendation for integration from the Slonim, et al. essay (2007).

The other administrative change brought about by integration is that programs will now be able to share resources to leverage economies of scale, for example, North Carolina is currently considering asking all branches to allocate some money for one vendor to convene a focus group to test the efficacy of health communications messages. The cost is prohibitive for some programs but affordable when each one contributes a portion. All programs will benefit by having access to the panel and being able to test their individual messages. By working together
all programs can afford to participate. Linking performance and fiscal accountability is an expectation from Dr. Collins’ original request for participation in December 2007. The proposed project described above links performance and fiscal accountability by applying a rigorous test to determine the efficacy of messages that require substantial funds to produce and disseminate. Even if the messages are shown to be unproductive, the money spent on initiating the trial is an example of connecting the use of fiscal resources (funds to produce health communication messages) to program accountability (messages that prompt behavior change).

Prior to integration there was very little sharing of funds. In 2007, the integration core team surveyed all CDI staff. Respondents’ ranked fiscal integration as the least appropriate area for integration. In a 2008 Washington survey, staff ranked fiscal integration as the most appropriate area for integration. In order to demonstrate that integration is fiscally beneficial, states will need to show more examples of how integration is helping to improve business practices. Some suggestions for business indicators are included in the recommendations section of this paper.

*How is chronic disease program integration changing the way the CDI section is organized?*

One of the ways that integration is changing the way the section is organized is by establishing the CoP’s. In North Carolina, the CoP’s use a matrix system of leadership to monitor tasks, as recommended by Axelsson and Axelsson (2006). In a matrix management environment, program supervisors and team leads monitor task completion. While the CoP’s in North Carolina did not naturally form as recommended by Lesser and Storck (2001), participation is voluntary. Just as program supervisors help develop employee work plans and monitor
performance, in North Carolina CoP leads facilitated the work plan development process and will monitor task completion and report results to employee program supervisors if requested. This is an organizational change because prior to integration, only program supervisors monitored task completion. A key difference in employee participation on workgroups and committees that existed prior to integration and employee participation on CoP’s, is that CoP team leaders are empowered to report on participation to supervisors. The CoP members decided that the reports should be limited to the number of meetings attended and an explanation of any products that the employee helped to develop. However, there is to be no discussion of participation or work product quality, as such an assessment can be subjective.

One of the areas that North Carolina is focusing on for integration is community-based health promotion, which has as its mission, to integrate the programs within the CDI Section that fund and support health promotion and coalition development activities in all counties and increase resource available for these efforts. Section leaders prioritized the development of this Community of Practice because Health Directors in local health departments began voicing concern regarding the overlap between the consultative services provided by the Office of Healthy Carolinians/Health Education and the Statewide Health Promotion Program in 2005. Concerns included competing program deliverables, local staff expectations, and site visits from multiple consultants. A primary recommendation from the 2008 NACDD State Technical Assistance and Review team was to develop an integrated Regional Consultation Approach and cross train consultants to serve as point people in their regions with ability to access special expertise as needed. Additionally, it was recommended to assure equitable geographical distribution of integrated regional consultants. In addition to local confusion, state legislators
identified competing funding requests to address community health promotion issues by the two programs. (S. Nelson, personal communication, 10/16/2008).

In Colorado, according to Andrea Poiners, reporting structures have changed as new fiscal, training and epidemiology units were created by taking these people out of categorical programs and putting them into more cohesive groups. Additionally, according to Sue Grinnell, the crosscutting groups in Washington have the formal authority to report on individual work plans through the team lead process. The most significant organizational chart changes in North Carolina have been the creation of the Chronic Disease and Health Promotion Manager positions that previously did not exist and that are paid for through multi-branch funding. This change reduced the number of direct reports for the CDI Section Chief as previously all branch managers reported to this position. The decrease in administrative responsibilities such as setting work plans and daily supervision has left the Section Chief with additional time to focus on advocating for programs and policy changes to prevent and control chronic disease (M. Plescia, personal communication, 11/18/2008).

How is chronic disease program integration changing the way we implement programs?

Some of the ways that integration is changing program implementation is through joint planning of interventions and evaluation. In North Carolina, the community-based health promotion CoP is developing a new technical assistance model for local health departments that emphasizes joint planning. The community-based health promotion CoP will pilot the model and the health data CoP will evaluate the initiative to assess effectiveness of the new approach. One of the primary responsibilities of the health data CoP will be to provide evaluation assistance for all of the CoP
initiatives. Eventually, the community-based health promotion CoP plans to issue joint Requests for Applications (RFA) to local health departments to conduct work in categorical program areas. The joint RFA’s will require local health departments to develop indicators to measure program outcomes that cross multiple programs (Ward and Fenton, 2007). Ward and Fenton, (2007), also recommend combined site visits as a way for staff at the higher levels to learn how integration is being practiced at more local levels (federal to state in the Ward and Fenton article and state to local health departments in North Carolina). Joint RFA’s would require joint site visits. Another way that integration is changing program implementation is through cross-training, or standardizing how different programs provide similar services. The Colorado chronic disease section established a cross cutting workforce development team that involves some cross-training. The training across different programs ensures that all staff providing similar services use the same procedures for tasks like monitoring external contracts. The NACDD report recommends solidifying roles and responsibilities through the establishment of Memoranda of Agreement (MOA), that specify what each participant will contribute. At this time none of the states are using this tool, but in Washington and North Carolina, there are charters which govern the CoP activities as recommended by Buhler (2007). Charters resemble MOAs in that participant expectations are developed through a consensus process and are defined within a written document.

A third way that integration is changing the programs implementation is through external partners. The Slonim essay recommends that, “successful integration initiatives create and sustain strong internal and external partnerships” (2007). The Ward and Fenton article recommends that integration successes be shared with external partners (2007). The ASHTO report recommends “alignment with external partners who can provide advocacy authority”
(Fields, 1998). In North Carolina, many external partners provide advocacy expertise because most state employees are prohibited from lobbying. Integration gives programs increased access to external partners. One example is the North Carolina Alliance for Health. This group has advocacy efforts around tobacco cessation and prevention and obesity prevention. The two CDI programs that have been involved with the Alliance are PAN and Tobacco Prevention and Control. Since integration, Diabetes and Heart Disease have been participating in more meetings. It is possible that Diabetes and Heart Disease will benefit from Alliance advocacy efforts as the groups learn more about each other.

*How is the organizational culture of the CDI Section changing because of chronic disease program integration?*

In 2007 in North Carolina, less than half of the staff felt that program integration would result in improved morale and staff satisfaction (38.9%). After a year of working on integration, 60% of staff indicated that they had seen no change in staff morale and satisfaction. However, over half (53.8%) indicated that that there was some greater diversity in perspectives, creativity, and new ideas since integration, 45% saw some positive change in communication and 42.4% saw increased opportunities for staff to contribute. These same items will be asked again next year to determine if they continue to improve, but they do indicate that the staff is beginning to see some positive outcomes from integration. Interestingly enough, the expectations in Washington are similar. Only 26.4% of the staff indicated that integration might result in improved morale and staff satisfaction. This may reflect a fear of change on the part of both staff. Additionally, half of the staff in Washington (50.1%) felt that integration might result in greater diversity in
perspectives and creativity, 58.4% felt that it would result in better communication, but only 39.6% felt that it would result in more opportunities for staff to contribute.

**Limitations**

The 2007 and 2008 North Carolina integration surveys are not completely comparable. The return rate for the 2007 survey was 86% and the return rate on the 2008 survey is approximately 60%. The survey percentages need to be normed in some way to be comparable. Also, it may not be appropriate for all staff in the CDI section to complete the survey. The Forensic Test for Alcohol branch has very little interaction with the other branches. The Injury and Violence Prevention branch, Asthma program and Breast and Cervical Cancer branch, which includes the WISEWOMAN program, are not included in integration, but their staff members participate on the various CoP’s. The survey should require respondents to list their branch or program affiliation so that results may be filtered. Currently program affiliation is voluntary. This question should become mandatory and the question about whether the survey respondent is staff or management be deleted to protect respondent anonymity.

Program integration is an evolving concept, hence much of the data collected about it has been through unrecoverable sources such as, interviews, personal knowledge and e-mail messages. According to Robert Yin, a recognized expert on case study research design and methods, a case study is an appropriate research strategy in that it focuses on contemporary events (Yin, 2003). While the literature review is based on scholarly evidence, responses to the research questions could only be gleaned through personal communication methods.
Recommendations and Conclusions

North Carolina has already begun implementing many of the best practices recommended in this paper by establishing CoP’s, each of which has a charter. The charter documents assign roles and responsibilities, ground rules and plans for conflict management. Each CoP has a team champion who advocates for the team and a leader or co-lead who convenes and facilitates meetings. With the help of a consultant, the section is developing a vision statement that will be put on all of the CoP charter documents and shared with all staff. Strategy maps for all CoP’s are shown in Exhibit 10. Some of the goals are broad and they will take a great deal of work. Full adoption of the CoP goals and objectives will be the biggest indicator of successful organizational change because none of these tasks is currently being done in a coordinated fashion. Adoption of the CoP goals and objectives, and finding other ways to work together will shrink the silos, as activities that were previously independent will be practiced together and collaboration will become the organizational culture.

One of the tasks that demonstration states will do over the next three years is to develop ways to measure integration effectiveness. The paper author, based on gaps in existing knowledge, has developed the remaining recommendations in this section to address measuring integration effectiveness. North Carolina should consider initiating some cross training to standardize similar functions like contract monitoring. The N.C. Division of Health Contracts Office has begun offering free classes through the N.C. State Auditor on how to monitor non-profits. Attendance at five of these courses constitutes a certification in non-profit monitoring. A possible indicator of cross-training could include the number of certifications obtained by CDI
staff. Another indicator of cross-training is the number of CDI categorical specific monitoring plans that reference other internal programs. A third indicator could be the number of joint site visits conducted. Often, entities receive money from several different programs within CDI. Currently each program or branch sets up a separate schedule for site visits and monitoring contact such as conference calls. The number of joint site visits and conference calls would demonstrate that integration is becoming the organizational norm.

In addition to indicators of cross-training, North Carolina should track other activities to determine if integration of business practices is occurring. Two possible indicators are the number of cell phone carriers, and the amount of money paid for cell phones. Presently some staff have Blackberries and others have Treo’s. If all staff used one carrier, it might be possible to negotiate a better rate plan. A potential drawback is that no single carrier may be able to provide service for everyone because of variations in service quality in different areas of the state, and some staff may travel more than other staff, yet it is important to consider the possibility of discounts as an indicator. Other indicators include the number of contracts for social marketing/health communications services, the number of joint requests for proposals that go out to local health department, the number of website contracts, and the number of vendors of promotional items. Tracking such indicators will show how whether or not programs are working together to leverage economies of scale.

While the survey is one way to measure employee satisfaction, it would be helpful to measure retention with the assistance of Human Resources. All employees have an exit interview when they leave the Division of Public Health. Employees could be asked if integration played a part in their leaving. The CDI section should also consider developing some traceable indicators to
measure a cohesive environment, such as the number of joint celebrations between cross branches, the number of cross branch activities conducted, and assessed with North Carolina’s version of the Strategic Alignment Assessment Rubric (Exhibit 2). Another evaluation suggestion is to train evaluators and program staff in measurement of Quality Adjusted Life Years and Disability Adjusted Life Years. Both of these complex and controversial calculations have been used to demonstrate the benefit of reducing the burden of chronic disease. Yet none of the burden books for the CDI Section reference either method. Employing these methods would address Slonim’s suggestion to focus on health outcomes and the recommendation to evaluate integration programs.

All demonstration states are charged with sharing lessons learned. One way to do this is to develop a list of milestones that other states can use to replicate integration successes. Although the list should include unsuccessful attempts, these will serve as tactics other states can avoid. The list could be stored on the intranet once available. It would catalogue the major events of integration such as establishing a vision, developing a logic model, hiring the managers, having the conference, receiving demonstration status, starting the CoP’s. The article by Kotter on why transformation efforts fail, recommends highlighting short term success. This keeps the momentum going. The milestone map will chart these indicators of progress. This milestone map will serve both as a guide for other states and a history of integration for North Carolina.

An area of additional study for CDC, as they observe all four states from a macro level is how leaders are of organizational change through the integration process. Integration is a significant departure from business as usual in fully-funded chronic disease programs. The idea of sharing staff is new when a program has been funded at a level where each staff position was completely
funded. Over the next three years, the leaders of the four demonstration states will have to manage powerful emotions of anger and fear of the unknown and resistance to change in a variety of personalities. Models of collaborative leadership and consensus building may be more effective than a dictatorial style. Not only will the leaders have to keep in mind the recommendations to keep this transformation effort from failing, they will also need to take care of themselves as leaders. Cataloguing leadership styles from the four leaders of demonstration projects and closely monitoring their leadership styles will help CDC develop indicators of leadership ability that can be shared with states as they hire people in high-level positions.

A final recommendation is that North Carolina continue practicing integration even if CDC drops it. Recently, the CDC integration officer left his post and the deputy director for the Chronic Disease Center said that they would have to check their budget to determine if they could replace him (R. Henson, personal communication, October 16, 2008). Integration has the ability to make the CDI section more efficient and more effective. Staying the course may not be popular, but it may eventually be beneficial.
References


