A CASE STUDY EXAMINATION OF STRUCTURE AND FUNCTION IN A STATE HEALTH DEPARTMENT CHRONIC DISEASE UNIT

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ABSTRACT

JEANNE ALONGI: A case study examination of structure and function in a state health department chronic disease unit
(Under the direction of Rebecca Wells, PhD)

Public health agencies at all levels have struggled to identify the optimum structure to support administrative and programmatic efficiencies that will maximize public health impact with the available resources. Although public health effectiveness literature documents how a state health department should function to achieve the intended impact on population health, little is known about how organizational structure changes actually affect function, and ultimately, population health. Focusing on the chronic disease unit of a state health department, this case study examined attributes (how an organization is structured) and practices (how an organization operates). Methods for this case study included document review and key informant interviews of health department staff and external stakeholders.

Data analysis suggests that the relationship between attributes and practices is complex and that organizational structure may influence not just practice but also other attributes such as goal ambiguity and workforce competency. Although the correlation analysis did not show a significant association between effectiveness and any of the elements in the conceptual model, qualitative responses indicate a belief that evidence-based decision-making, goal ambiguity, political support, responsiveness, and workforce

competency all facilitate effectiveness, and that collaboration plays a fundamental role in contributing to each of those elements. Structure was identified as an influence on collaboration, responsiveness, goal ambiguity, and hierarchical authority. However, the roles of three other elements -- culture, leadership, and physical proximity – were less clear, and either mitigated the effects of structure, enhanced the effects of structure, or were amplified by structure.

This study has served both to document a point in time for Montana's Bureau of Chronic Disease Prevention and Health Promotion and to explore the elements of the conceptual model that may facilitate effectiveness for chronic disease units in other states, other units in within state health departments, and public health agencies at other levels. The results of the qualitative and quantitative analysis suggest interrelationships between the elements of the model rather than a simple linear cause and effect pathway. These findings identify levers around which capacity can be built that may strengthen the effectiveness of state health department chronic disease units.

For my daughter, Michael,

and

For all public sector public health practitioners and diligent stewards of the public trust

and

In memory of Steven B. Thacker

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CHAPTER 1: INTRODUCTION

Purpose

Describe organizational structure and function in a state health department chronic

disease prevention and control unit, and explore the possible roles of organizational

attributes and practices in driving performance outcomes.

Background

The Institute of Medicine's 1988 report "The Future of Public Health" defined public

health as "what we, as a society, do collectively to ensure the conditions for people to be

healthy" and called for changes in practice, professionalism, and infrastructure. It also

included specific recommendations for state health departments to adopt in order to

facilitate these changes.[40] In the years since, the focus of public health practice has shifted

from the prevention of communicable diseases to the mitigation of the impact of chronic

disease. Concurrently, public health practice has expanded to include an emphasis on

ensuring rigorous application of the evidence-base in developing and deploying

interventions, as well as a commitment to building a competent public health workforce

and effective infrastructure. In the past decade, public health decision makers have begun

to place greater emphasis on evaluating the evidence-base for particular health

interventions and to preserve fidelity in the practical translation of intervention research.[1, 7,
10, 16, 25, 29, 35, 38, 39, 40, 48, 65, 66, 67, 75, 79, 81, 86, 89]

Although public health evaluators have proposed guidelines for professional and
organizational competencies, the role of the structure of public health agencies in
facilitating effective functioning has not been closely examined. This dissertation examines
the organizational attributes and practices of a state health department, focusing
specifically on the role of the chronic disease prevention and control unit. Findings will
assist the state health department in identifying levers of effectiveness and will inform
future empirical work in this area.

The Importance of Chronic Disease Prevention and Control

Chronic diseases are the leading causes of death in the United States.[59] In 2000, heart
disease, cancer, and stroke were responsible for more deaths in the United States than all
other causes combined. The landmark 1993 paper by McGinnis and Foege identified
tobacco use, diet, and activity patterns as responsible for 700,000 deaths in 1990 -- more
than all other risk factors combined. Since then, these and other modifiable risk factors
have been the focus of preventing morbidity and mortality from chronic disease, including
secondary disability.

Beginning with the release of "Healthy People 2000" – the first set of national
population health goals[40] – chronic disease prevention and control activities have been a
top priority for the public health system in the U.S.   Health indicators in the Healthy People
series and in the new "National Prevention Strategy" have included measures for physical

activity and fitness, nutrition, tobacco use, heart disease and stroke, cancer, arthritis, and diabetes.

The Role of State Health Departments

State health departments are part of a system of organizations whose mission is to improve the population's health. This system also includes national agencies such as the U.S. Department of Health and Human Services, the U.S. Public Health Service, and the Centers for Disease Control and Prevention (CDC); local agencies such as local health departments and community-based organizations; academic institutions; voluntary and non-profit organizations; and hospitals and other health centers.

According to the Association of State and Territorial Health Officials (ASTHO), state health departments protect public health by "gathering, analyzing, and disseminating health information; regulating health threats and potential hazards; preparing for and responding to disasters and emergencies that threaten public health; providing health care services and programs; regulating healthcare services and professionals; and paying for healthcare services to assure access."[2] At the state level, chronic disease prevention activities are typically part of a portfolio that incorporates programs related to maternal and child health, communicable disease response, injury prevention, oral health promotion, reproductive health promotion, emotional/mental health and substance misuse, emergency preparedness, WIC, health care facility regulation, and access to primary care services. The range of activities undertaken in a given state reflect executive and legislative action at the state level, federal grant awards, and private grant initiatives; these activities may vary

considerably.[2, 3, 4, 5] Because state health departments vary so much in structure, funding levels, and political setting, no single state health department could be considered representative of the whole.

CDC specifically funds state health departments to assume a leadership role in chronic disease prevention and control activities. This occurs through categorical disease and risk factor reduction program grants, the Coordinated Chronic Disease Program grant, and the Preventive Health and Health Services Block Grant. Currently, states, territories, and in some instances tribes, receive CDC support and technical assistance to both deliver public health programs and population-level health improvement in categorical disease areas, and to address risk factors. Categorical disease areas include arthritis, breast and cervical cancer, comprehensive cancer, depression and mental health, epilepsy, heart disease and stroke, and oral health. Grants to address risk factors include those targeted at physical activity, obesity, healthy communities, school health, healthy aging, and healthy eating. No state, territory, or tribe receives support in all of these areas. Support may be in the form of funding, staff detail, tools and resources, or technical assistance.

Current Trends in Public Health Administration

State-level public health agencies and their funders, faced with difficult economic realities, are increasingly looking for administrative and programmatic efficiencies that will maximize public health impact with the available resources. Three recent initiatives in particular focus on state health department operations: state health department

accreditation, the National Prevention Strategy, and Coordinated Chronic Disease funding from CDC.

State and local level public health department accreditation by the Public Health Accreditation Board is now underway with more than 100 health departments having applied for accreditation in 2012. Funded in part by the Robert Wood Johnson Foundation and the CDC, this effort intends to assure a minimum level of functioning and effectiveness in public sector public health practice. Although accreditation is currently voluntary, accreditation status may impact competitiveness for funding in the near future.[12, 28]

The National Prevention, Health Promotion, and Public Health Council released the National Prevention Strategy in June 2011 [66]. This strategy is intended to focus public health efforts at all levels. Specifically, the National Prevention Strategy calls on all states to collaborate on policy decisions regarding health, conduct comprehensive health needs assessments, deliver effective public health interventions, and promote shared data-systems in the areas of tobacco-free living, preventing drug and alcohol misuse, healthy eating, active living, injury and violence prevention, reproductive and sexual health, and mental and emotional well-being. In the future, the strategy will likely be used as a basis for evaluating state health departments applying for federal grants.

In the summer of 2011, the National Center for Chronic Disease Prevention and Control released funding for state health departments to implement new structural and operational interventions to coordinate chronic disease prevention activities across categorically defined programs. This funding opportunity was preceded by ten years of work by the National Association of Chronic Disease Directors (NACDD), state health

departments, and CDC to explore the opportunities for chronic disease program integration and the possibility that administrative changes to federally-funded chronic disease programs could result in functional and fiscal efficiencies.[64, 65, 79] CDC is currently finalizing a pilot project in which four select states negotiated their entire chronic disease portfolios rather than receive separate categorical grants. The evaluation of this integrated funding model and its impact on public health outcomes is underway.

Public health agencies at all levels have struggled to identify the optimum structure to support these efficiencies. The pressures of accreditation and coordinated chronic disease funding have resulted in small and large-scale organizational changes. These changes range from alterations in leadership – in the last 12 months, 64% of state health officers were new hires – to structural reorganization.[9, 65] In spite of a clear directive from authorities at all levels to use evidence-based decision-making in public health issues,[16, 25, 66] and the broad uptake of evidence-based interventions for risk factor reduction, the evidence linking organizational structure and public health outcomes remains undeveloped. State health departments have had very little evidence to apply in creating highly efficient public health organizational structures that maximize population health outcomes.[26, 78]

Despite this lack of evidence, the assumption is that an effectively-run state health department that facilitates evidence-based decision-making by competent professional staff employing adequate resources will improve population health.[57, 62] Various programs and tools, such as the Public Health Accreditation Board's voluntary accreditation process, the NACDD's State Technical Assistance Review (STAR) program, and the Public Health Framework Assessment Tool (PHFAST), are aimed at evaluating functional and operational

effectiveness. Both STAR and PHFAST are based on a framework for chronic disease prevention and control published by CDC in 2003.[18] These tools help assess a state health department's capacity according to the framework in eight domains as described in Table 1.[64]

Table 1: Public Health Framework Assessment Tool Domains

Domain	Definition
Leadership	The state chronic disease prevention and control unit is the unifying voice for the prevention and control of chronic diseases.
Epidemiology and Surveillance	The state chronic disease prevention and control unit establishes the burden associated with chronic diseases and frames the problem to be addressed.
Partnerships	The state chronic disease prevention and control unit establishes strong working relationships with other government agencies and with nongovernmental, lay and professional groups.
State Plans	The state chronic disease prevention and control unit uses data and works with partners to develop comprehensive state plans to guide program efforts.
Interventions	The state chronic disease prevention and control unit identifies specific targets for change (population segments, organizations, or environments), chooses the best channels through which to effect such changes, and selects appropriate strategies for doing so.
Evaluation	The state chronic disease prevention and control unit establishes systematic approaches for determining whether its comprehensive chronic disease control program is being implemented successfully and whether its objectives are being achieved.
Program Management and Administration	The state chronic disease prevention and control unit provides the consistent administrative, financial, and staff support necessary to maintain successful programs.
Program Coordination	The state chronic disease unit has strategically aligned chronic disease categorical program resources to increase the effectiveness and efficiency of each program in a partnership without compromising the integrity of categorical program objectives.

Although public health effectiveness literature documents how a state public health department should function to achieve the intended impact on population health, little is known about how organizational structure changes actually affect function, and ultimately, population health. This dissertation will describe, through examination of a case study, organizational structure as it relates to function in a state health department chronic disease unit, in order to improve outcomes.

Specific Aims:

1. Describe the organizational attributes and practices of a state health department chronic disease prevention and control unit.

2. Identify potential influences of a state health department chronic disease prevention and control unit structure on function related to chronic disease prevention and control.

3. Develop a plan for change that operationalizes findings by leveraging structural attributes to facilitate organizational effectiveness and improve population health.

CHAPTER 2: LITERATURE REVIEW AND MODEL DEVELOPMENT

I conducted a formal literature review by initially searching for peer-reviewed literature that addressed organizational effectiveness and structure in state health departments. I then conducted an Internet search for reports and recommendations from organizations working to build state health department capacity. I expanded the assessment to include non-profit and private sector organizations as well as other types of government agencies. I scanned the bibliographies of all relevant documents for potential additional sources. Finally, I queried experts in the field of state public health practice for potential sources of information. Findings from the literature review were used to develop a conceptual model depicting the relationship between organizational attributes and practices in chronic disease units of state health departments. The conceptual model is discussed later in this chapter.

Findings from the Literature Review

While measures of organizational effectiveness and functional domains related to organizational effectiveness were found, no specific investigation of the relationship between state-level public health organizational structure and effectiveness of chronic

disease prevention activities was present in the literature. Few articles reported empirical

studies of effectiveness relevant to this inquiry. Those references that were empirical in

nature reported findings consistent in a few thematic areas. Structural attributes including

staffing levels, stability, resource levels, and organizational change were found to impact

effectiveness.[7, 27, 31, 32, 34, 81] Workforce competency including leadership, experience level,

technical skills, professionalism were linked to effectiveness.[7, 13, 34, 43] Evidence-based

decision-making, performing essential services, goal clarity, and managing uncertainty were

also linked to effectiveness.[7, 31, 43, 57, 81] Table 2 highlights the findings of empirical studies

(see Appendix 1 for a comprehensive summary table).

Table 2: Literature Review Empirical Findings

Citation	Relevant conclusions
Ballew P, Brownson RC, Haire-Joshu D, et al. Dissemination of effective physical activity interventions: Are we applying the evidence? Health Education Research. Oxford University Press. 2010.[7]	Defined effectiveness as using evidence-based public health interventions. Infrastructure **stability** (budget cuts and newness of staff) and **training** affected organization's ability to implement **evidence-based programs**.
Bhandari MW, Scutchfield FD, Charnigo R, et al. New data, same story? Revisiting studies on the relationship of local public health systems characteristics to public health performance. J Public Health Management & Practice. 2010;16(1):110-117.[13]	Related system organization to performance at local level. Agency organization not investigated. Correlated **workforce competency**, including **leadership** positions, with performance.
Erwin PC, Greene SB, Mays GP, et al. The association of changes in local health department resources with changes in state-level health outcomes. Am J Public Health. 2011;101(4):609-615.[27]	Used changes in state-level health outcomes to measure local health department effectiveness. Increase in **full time equivalents** correlated with a decrease in cardio vascular disease deaths.
Gist ME, Locke EA, Taylor MS. Organizational behavior: Group structure, process, and effectiveness. J of Management. 1987;23(2):237-257.[31]	Attributed sufficient **resources**, **structure**, and **clear goals** to competent work.
Table continues on next page	

Citation	Relevant conclusions
Greenhalgh. Maintaining organizational effectiveness during organizational retrenchment. J Applied Behavioral Science. 1982;18(2):155-170.[32]	Examined effectiveness in the context of organizational change. Personnel change and **turnover** can reduce organizational effectiveness.
Hajat A, Cilenti D, Harrison LM, et al. What predicts local public health agency performance improvement? A pilot study in North Carolina. J Public Health Management & Practice. 2009;15(2):E22-E33.[34]	Correlated **staffing level** and **experience**, particularly having more non-health staff such as IT, to performance improvement.
Kimberly JK, Rottman DB. Environment, organization and effectiveness: A biographical approach. J of Management Studies. 1987;24(6):595-597.[43]	Postulated that **structure**, **professionalism** and evidence-based **decision-making** directly influence effectiveness.
Mays GP, McHugh MC, Shim K, et al. Institutional and economic determinants of public health system performance. Am J Public Health. 2006;96(3):523-531.[57]	Equated **essential services** with effective outcomes in local health departments.
Stazyck EC, Goerdel HT. The benefits of bureaucracy: Public managers' perceptions of political support, goal ambiguity, and organizational effectiveness. J Public Administration Research and Theory. 2010;21:645-672.[81]	Emphasized performance over procedure in ability to respond to external environment. Highlighted the importance of **managing uncertainty** related to environmental sources.

Other references in the literature echoed these empirical findings and proposed

additional organizational traits and behaviors that may influence effectiveness. Aspects of

the organization that were related to structure and infrastructure included reporting as well

as collaborative relationships, location of resources, location of authority, and location of

responsibility. Structure and infrastructure were often used interchangeably, though in

some instances a distinction could be inferred; structure referred to a specific and discrete

organizational unit, and infrastructure to a broader network. Several references call for

infrastructure that is both stable (i.e., predictable and reliable) and dynamic (i.e., responsive to changing needs and resources). Function, operations, and performance were all used to describe how an organization achieved its goals. The measurement of organizational effectiveness used most consistently is perceived effectiveness.[31, 36, 46, 81, 57, 81]

Of particular interest was a model of organizational performance proposed and tested by Stazyk and Gordel.[81] Drawing on resource dependence and contingency theories, the authors proposed and then showed that hierarchical authority in health and human services bureaucracies could moderate the negative effects of goal ambiguity and low political support on organizational performance. _Hierarchical authority_ describes centralization in decision-making. _Goal ambiguity_ describes the extent to which organizational goals are understood by the staff. _Political support_ describes the level of endorsement a program receives from decision makers inside the organization as well as policy makers external to the organization.[81]

Four elements were especially prominent in the literature and relevant to current performance improvement activities nationwide; they are therefore included in the conceptual model detailed below. These elements include collaboration, evidence-based decision-making, workforce competency, and responsiveness. They are defined as follows:

Collaboration: working internally and externally for the purpose of leveraging resources to maximize effectiveness and efficiency.[18, 75, 80] Increasingly, expert opinion has called for better collaboration and coordination in the practice of public health generally[55, 59, 64, 74, 85] and for chronic disease prevention and control specifically.[64, 65, 79] The Public Health Accreditation Board's assessment, PHFAST, and current chronic disease prevention

and control capacity building efforts funded by CDC include measures for internal and external collaboration.[12, 68] The National Center for Chronic Disease Prevention and Health Promotion at CDC has created a special grant program to support the development of collaborative capacity in chronic disease units in state health departments.

Evidence-based decision-making: the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of populations.[16] There is little disagreement that evidence-based decision-making is critical to effective public health practice. Factors affecting evidence-based decision-making in state health department chronic disease units include awareness, funding, incentives, CDC support, staff competency, staff motivation, and strong partnerships and collaboration. Some researchers have suggested that structure may constrain staff influence on collaboration, but this has not been specifically studied.[1, 7, 16, 18, 33, 45]

Responsiveness: the ability of the organization to react dynamically to changes in the political environment and address emerging public health needs. Review of the literature suggests that flexibility, surge capacity or the ability to expand activities as needed, entrepreneurial strategies, and innovation are key to dynamic effectiveness in state health departments. These attributes allow the organization to adapt to changing environments, resource levels, political support, health trends, and intervention science. While researchers have identified organizational structure as potentially supportive of responsiveness,[8, 12, 39, 40, 45] this relationship has not been studied empirically.

Workforce competency: the level of skill, professionalism, and knowledge present among staff. Many researchers have described the role of workforce competency in public

health practice in general and identified minimum skill and knowledge sets for chronic disease practitioners specifically. Researchers have also documented the value of training to develop, maintain, and even improve competency. Finally, researchers have suggested that organizational structure impacts specialization, technical complexity, and professionalism – all components of workforce competency –but again, this relationship has not been studied. [18, 31, 43, 88]

Model Development

While it is clear that these performance improvement elements contribute to effectiveness, the specific relationship between these elements and the organizational structure is not clear. In order to frame the dissertation, I attempted to develop a conceptual model that would identify attributes and practices that might appropriately relate the organizational structure of the state health department chronic disease unit to its effective functioning. The initial model included 10 factors derived both from the literature and expert opinion sources. With no documented consensus on how these factors might relate to each other, to structure, and to effectiveness, the initial model was enormously complicated. Consequently, I reexamined the literature, refined the categories, and identified the most critical factors. This effort resulted in a model that acknowledges multiple dimensions of structure and focuses on specific aspects of performance that the literature suggests may be of primary importance. For the purpose of this study, these elements are considered in two groups and defined as follows: **attributes** are elements that describe how the unit is structured, and **practices** are elements that describe how the unit

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operates. The resulting model includes the attributes of hierarchical authority, goal ambiguity and political support taken from Stazyk and Goerdel's model of organizational performance,[81] and also incorporates evidence-based decision-making, responsiveness, and collaboration (Figure 1).

The organizational attributes of goal ambiguity, hierarchical authority, organizational structure, political support, and workforce competency form the center of the figure. Organizational practices including evidence-based decision-making, responsiveness, and collaboration encircle the attributes. This dissertation will attempt to discern the connection between these attributes and practices, how they contribute to overall organizational performance, and ideally, to improved population health.

Figure 1: Conceptual Model – Organizational Attributes and Practices in State Health Department Chronic Disease Units
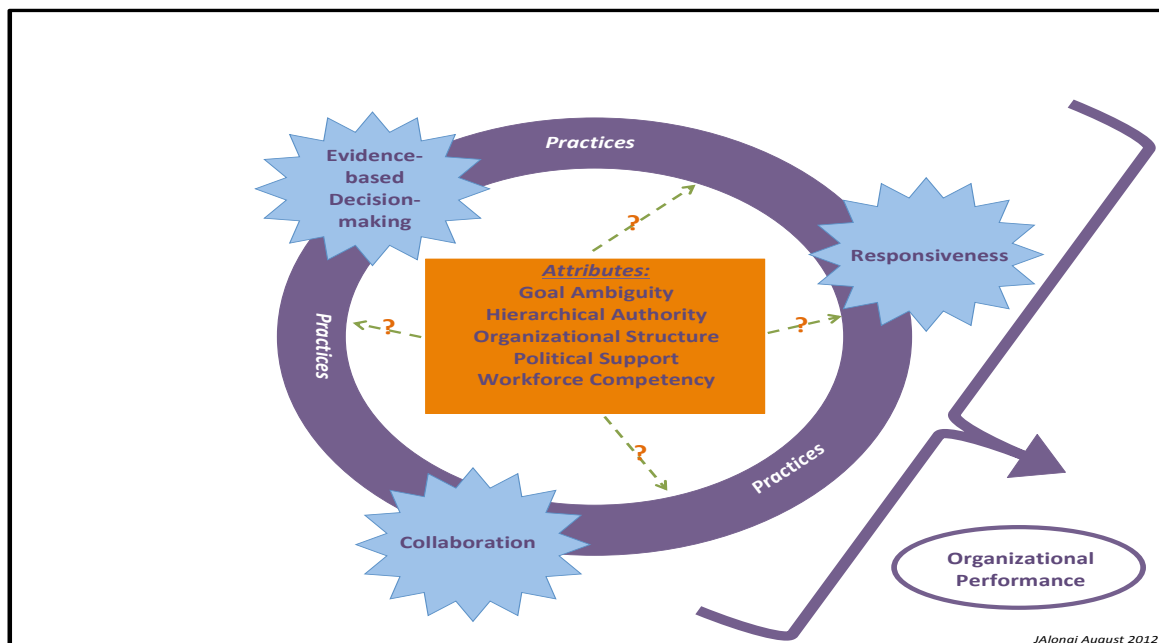
CHAPTER 3: METHODS

This dissertation uses case study methods to describe how the attributes and practices of one state health department chronic disease prevention and control unit relate to the conceptual model described in Chapter 2 to drive performance outcomes.

Yin defines a case study as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident."[90] In this study, the phenomenon described includes organizational practices such as evidence-based decision-making, responsiveness, and collaboration. Context would include organizational attributes such as goal ambiguity, hierarchical authority, structure, political support, and workforce competency. Case study methods are particularly appropriate to employ when the complexity of the case requires use of multiple sources of evidence and relies on conceptual models to bound the investigation. In this study, multiple sources will include interviews with several different key informants both internal and external to the state health department chronic disease unit being studied, as well as official administrative and communication documents from the unit. The conceptual model described in Chapter 2 was developed by applying theoretical propositions from the literature to the research question.

Research Question

Overarching question: How is the organizational structure of state health

departments related to chronic disease unit performance?

Study questions:

1. How is the state health department's chronic disease prevention and control unit

   structured?

2. What are the perceptions of managers, internal stakeholders, and external stakeholders

   regarding the effectiveness of the chronic disease unit?

3. What do managers, internal stakeholders, and external stakeholders believe are the

   structural factors that influence the unit's effectiveness?

4. How are these beliefs consistent with the elements included in the conceptual model?

5. How well do both the PHFAST and the NACDD Workforce Capacity Assessment Tool

   inform the proposed conceptual model?

Case Definition

The case considered here is the chronic disease prevention and control unit of a

state health department.

Study Design

Due to the complexity of examining the identified issues in one health department,

and the exploratory nature of the study, a single case was used to perform a descriptive

examination of the conceptual model and the study questions. These rationales for single-

case design are described in more detail below and are consistent with those described by Yin.[90]

The organizational structure of chronic disease prevention and control units, as well as state health departments, varies greatly across states. Therefore, creating a sample that credibly represents all state health departments would require a nearly 100% sample. Differences across the various states' chronic disease prevention and control units may include: placement within state government (e.g., a stand-alone public health agency, housed within a larger agency, co-contained with Medicaid or separate from Medicaid); placement within the public health agency (e.g., a stand-alone unit or part of a larger health promotion unit); scope (e.g., number of federally-funded chronic disease programs, number of state-funded chronic disease programs, inclusion of programs such as maternal and child health, genomics, injury prevention, and oral health); and differences in staffing levels and models (e.g., state employees, public health institute contract employees, university contract employees, etc.). Therefore feasibility considerations suggest a single-base design is appropriate. Because the relationship between structure and practice in public health agencies has not been studied in detail previously, an exploratory single case describing a state example in depth provides an opportunity to consider how the conceptual model might be most effectively applied and tested. Additionally, this inquiry will yield insight into the utility of two assessment models that are currently in use but have not been formally evaluated – the NACDD Public Health Framework Assessment Tools (PHFAST) (Appendix 2) and the NACDD Competency Assessment Tool (Appendix 3).

Case Identification

Montana's state health department chronic disease prevention and control unit has requested to serve as the case for this study. The case study coincides with an effort they will be undertaking shortly to examine their organizational structure and operations, identify opportunities for performance improvement, and develop a performance evaluation protocol for the unit. The state health department chronic disease unit has begun an internal process to assess capacity using the PHFAST instrument, which offers the opportunity to explore the applicability of the conceptual model to the PHFAST framework.

Officials from Montana's chronic disease unit hope the case study results will identify opportunities for effective organizational development in the context of the evidence-based decision-making and workforce competency work their funders recommend.

Data Collection and Analysis

Data were collected through document review and key informant interviews (Table 3). Reviewed documents included the organizational chart for the chronic disease prevention and control unit, the PFHAST assessment completed by the unit, and the state coordinated chronic disease plan. These were obtained from key informants within the chronic disease unit with the permission of the Chronic Disease Director.

Key informants interviewed included managers of programs within the chronic disease prevention and control unit, the chronic disease director, other senior staff of the chronic disease unit, program and administrative staff of the chronic disease unit, the state

health official, two senior staff members from the state health official's office, and

representatives of two key partner organizations identified by the chronic disease director.

Table 3: Data Collection Strategy

Data Source	Method	Purpose
Organizational charts	Document review	Attributes: • Structure and reporting relationships
State chronic disease plan	Document review	Practices: • Evidence-based decision-making • Collaboration • Responsiveness
Chronic disease director Chronic disease program managers Chronic disease program staff	• Interviews • PHFAST	Attributes: • Goal ambiguity • Hierarchical authority • Organizational structure • Political support • Workforce competency Practices: • Evidence-based decision-making • Collaboration • Responsiveness
State health official	Interview	Attributes: • Goal ambiguity • Hierarchical authority • Organizational structure • Political support • Workforce competency Practices: • Evidence-based decision-making • Collaboration • Responsiveness
External partners	Interviews	Attributes: • Goal ambiguity • Political support Practices: • Evidence-based decision-making • Collaboration • Responsiveness

Question topics included those listed in Table 4 below. Assessment tools from

practice and literature informed data collection activities. The NACDD Public Health

Framework Assessment Tool (PHFAST) has been used by several states to examine their

chronic disease prevention and health promotion capacity. NACDD has also developed a

workforce competency assessment tool to identify gaps in capacity. Although the original

study design called for using NACDD workforce competency assessment, this was not done

as Montana is currently preparing to undertake a broader workforce competency

assessment for the entire Division of Public Health and Safety.   Detailed field notes were

collected and summarized. Draft summary notes were shared with key informants to

assure accuracy.

Table 4: Interview Question Topics

Model element	Question topic
Goal ambiguity	• Perception of goal clarity within the leadership • Perception of goal clarity within the staff
Hierarchical authority	• Perception of level of authority in current position • Perception of where decision authority rests within the structure
Political support	• Perception of external political support • Perception of internal political support
Workforce competency	• Opinion of staff professional competency • Use of competency standards • Access to ongoing training
Evidence-based decision-making	• Perception of criteria for decision-making • Inputs used in decision-making • Perception of robustness of decision-making
Collaboration	• Perception of extent of collaboration • Perception of collaboration competency
Responsiveness	• Confidence that emerging needs can be adequately addressed • Confidence that core work will continue if resources are interrupted • Confidence that the unit can respond strategically to new opportunities • Perception of changes in responsiveness over last five years

Model element	Question topic
Performance	• Perception of program effectiveness • Perception of unit effectiveness • Perception of state health department effectiveness • Perception of structural elements that facilitate effectiveness • Perception of structural elements that impede effectiveness • Perception of impact of changes to structure or operating practices • Perception of ideal unit structure

Data from document sources as well as key informant sources were organized by model element and coded by perspective, process, relationship, and activity and reviewed for patterns and emerging themes. Identified patterns were explored for all respondents and for each factor in the conceptual model. Key informants' opinions regarding causality between elements of the conceptual model were reported.

Interview Pilot

Per dissertation committee recommendation, the interview tool was piloted and refined accordingly before data collection began. Per Institutional Review Board recommendation, a script highlighting key points of the informed consent approval process was included.

The Institutional Review Board required the inclusion of extra protections because interview respondents would be asked to speak about organizational structure, environment, and effectiveness. The Chronic Disease Director provided a letter assuring contributors that no personnel action could or would be taken against them as a result of their participation in the study or their responses to the interview questions, and they could not be fired. The informed consent form also stipulated that although participants would

not be identified by name in the analysis and data report, due to organizational size and relationships between potential participants, it might be possible for readers to infer other respondents' identities and match specific comments with specific participants.

Once the consent form was refined per Institutional Review Board specification, the draft interview tool was piloted with three volunteers (Table 5), each with health department chronic disease unit experience in a different state. All three worked extensively with external partners, two were program managers, one was a chronic disease director, and one had left the state health department and is now working in a state-level voluntary organization.

Table 5: Interview Pilot Volunteer Respondents

Volunteer	State Health Department Experience	Chronic Disease Director	Chronic Disease Program Manager	Chronic Disease Program Staff	Voluntary/NGO Experience
A	✓	✓	✓	✓	✓
B	✓		✓	✓	
C	✓			✓	

Feedback from the pilot volunteers confirmed dissertation committee members' suggestions that the open-ended format of the questions might be improved by adding a scaled-response option. A hybrid solution was chosen as the final format: a scaled response with an open-ended question. The scaled response uses a four point Likert scale to ensure that middle-range answers did not default to or become conflated with "I don't know" and "Not applicable" responses. The open-ended questions gave an opportunity to probe for more information.

Also in accordance with dissertation committee member input, pilot volunteers found questions delivered in a conversational language more comfortable and easier to respond to than the more formal original versions of the questions. The pilot volunteers also suggested reordering the questions to move workforce competency, a potentially uncomfortable topic to address, towards the end of the interview. Per the volunteers' recommendation, prompts were added to the interview script to show both hard copies of the chronic disease unit's organizational chart and the conceptual model to participants along with definitions of each of the conceptual model elements to further clarify the context and questions. The revised master question list and interview script are included in the appendix (Appendix 4).

Data Collection

Per the original design of the study, participants were solicited from among the employees of the Chronic Disease Prevention and Health Promotion Branch of the Division of Public Health and Safety in the Montana Department of Public Health and Human Services, the leadership of the Public Health and Safety Division, and representatives of external partner organizations. Of the 53 positions indicated on the organizational chart (Appendix 7), two were shared in one full time equivalent (FTE) position, five were vacant, one was a contractor, one was on maternity leave, and eight either declined, failed to respond, or were unable to keep their interview appointments. This left a total of 37 respondents. In addition, the State Health Official/Division Administrator, the State Medical Officer for Public Health/Medicaid Medical Director, and the Public Health Systems

Improvement Coordinator/Accreditation Manager participated from the Public Health and Safety Division Administrator's Office. Two representatives of external partner organizations -- a local health department and chronic disease focused advocacy organization, also participated. A third external partner representative was unable to participate at the last moment. The total number of interviews completed was 42. Participants were classified according to organizational level and position per the unit's organizational chart (Table 6).

Table 6: Study Participants

Classification	Number Invited	Number Participating	Percent Response
Chronic Disease Director	1	1	100%
Chronic Disease Section Manager	4	4	100%
Chronic Disease Program Manager	12	11	91.7%
Chronic Disease Program Staff – Administrative	7	5	71.4%
Chronic Disease Program Staff – Content	21	16	76.2%
State Health Officer/Division Administration	3	3	100%
External Partner Representatives	3	2	66.7%
Total	51	42	82.4%

Interviews were limited to one hour in length. A longer interview time would have allowed for deeper probing of responses to open-ended questions. Note-taking was conducted via laptop in a specially designed table format (Appendix 5). Draft notes were shared electronically with each participant; all were given the opportunity to clarify, edit, or amend the notes. Out of 42 participants, 12 (or 28.5%) submitted edits.

Although an assessment of workforce competency in the chronic disease unit was originally planned, it was determined that such an assessment would interfere with a larger workforce competency assessment planned by the Division of Public Health and Safety. At

the request of the Division, and after consultation with the dissertation committee chair, this activity was removed from the case study.

The chronic disease unit had recently (May 2012) completed a survey version of the PHFAST tool and was able to share that data; that assessment was not repeated.

Data Processing

Once the interview documents were finalized, each participant was assigned a randomized identification number. A random sequence from 102-144 was generated at www.random.org and applied to the alphabetical list. This random sequence was applied to the alphabetical listing of participants. All personally identifiable information was then removed from the records, including locations on the organizational chart, in order to further protect anonymity. Quantitative data, including classifications and answers to scaled response questions, were entered into an Excel spreadsheet. In cases where a respondent indicated two answers on the Likert scale, the lower rating was entered.

Quantitative, qualitative, and mixed methods analyses were performed using the Dedoose platform. Dedoose is a web-based analysis package designed to maintain rigorous security for data sets, link quantitative and qualitative data, and perform the following: chi-square testing of relationships between quantitative variables, document text analysis, and weighted mixed methods analysis.[54]

A second spreadsheet defining the data identifiers was created (Appendix 6). Both spreadsheets were uploaded to the web-based Dedoose mixed methods analysis platform. The cleaned and de-identified qualitative interview data were also uploaded to Dedoose

and the quantitative and qualitative records were linked. Interview data were initially

coded by conceptual model element and then by theme. Themes emerged through an

iterative process of key-word identification and memoing. As concepts emerged during this

process, codes were reassessed and revised. This necessitated removing all coding tags and

memos and starting the process anew (Figure 2). This cycle was completed multiple times,

resulting in the final set of codes (Table 7).[15, 19]

Figure 2: Iterative Coding Process
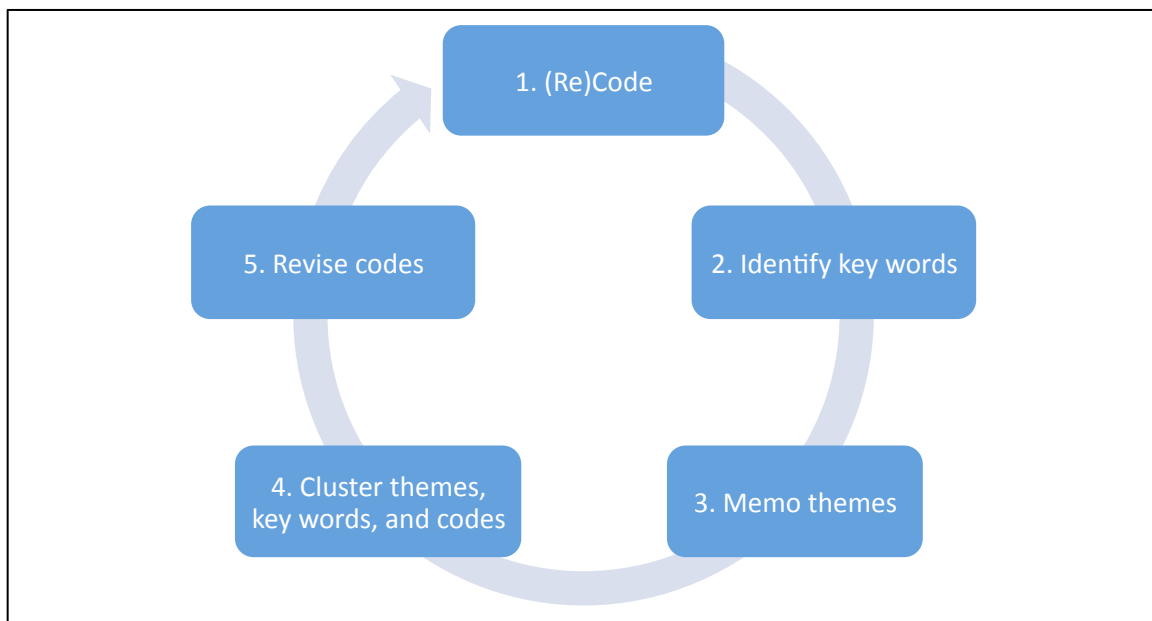
1. Code

The first step of coding relied on the elements identified in the conceptual model as

the sole codes. Each response in each interview was coded according to the elements of

the conceptual model that the response addressed. In most cases this was the element the

question addressed and in many cases the answer linked another element in the response.

For example, when asked about evidence-based decision-making, some respondents identified workforce competency as a related issue.

2. Identify Key Words

Key words named concepts that the respondent identified as important to understanding a particular element, employing a particular element, or to effectiveness in general. For example, when asked about political support, some respondents identified leadership as being important to garnering and leveraging support. Leadership became a key word.

3. Memo themes

Themes and concepts that linked elements or represented additional or perhaps more complex influences on the system were noted. For example, the influence of funders was identified both as having a positive impact on a given element or on general effectiveness in some instances and a negative impact in others. The direction of influence might be dependent upon the element, dependent upon the funder, or multifactor in nature. Through memoing, funder influence was identified as a theme.

4. Cluster themes, key words, and codes

Initial codes, identified key words, and emerging themes were listed together and reviewed for duplication, clarity, and discrete ideas. Conceptual relationships between codes, key words, and themes were explored. For example, responses that referenced

participation in the legislative process received codes including political support,

collaboration, and responsiveness. These were often also linked with ideas about the

organizational culture regarding partner relationships, administrative oversight and funder

influence. Clustering helped identify what concepts might be related and whether or not

they should be considered separately.

5. Revise codes

After the clustering exercise was completed, the code list was revised to reflect

emerging discrete themes and the hierarchy that might exist between them. For example,

the themes of funder influence and administrative rules might both be considered

components or the broader theme of oversight.

6. Recode

Coding tags were then removed from the database and all interviews were recoded

using the revised code list. This cycle was continued until the 5th step did not result in

changes to the code list.

Table 7: Code Development

Original Codes	Key Words	Emerging Themes	Final Codes

▪ Collaboration
▪ Evidence-based decision-making
▪ Political support
▪ Responsiveness
▪ Performance
▪ Structure
	▪ Communications
	▪ Evaluation
	▪ Partners
	▪ Environment
	▪ Funder
	▪ Administrative rules
	▪ Leadership
	▪ Staffing
	▪ Innovation
	▪ Visibility
	▪ Politics
	▪ Management
	▪ Interventions
	▪ Problem solving
		▪ Culture
		▪ Entrepreneurial behavior
		▪ Environment
		▪ Technology
		▪ Specialization
		▪ Oversight
		▪ Proximity
			▪ Culture
			  - Communications
			  - Entrepreneurial behavior
			  - Evaluation
			  - Innovation
			  - Partnership
			▪ Environment
			  - Physical environment
			  - Proximity
			  - Technology
			▪ Outputs
			  - Intervention
			  - Media presence
			  - Visibility
			▪ Oversight
			  - Administrative processes
			  - Funder influence
			▪ Structure
			  - Leadership
			  - Roles/ responsibilities
			  - Staffing
			▪ Elements
			  - Collaboration
			  - Evidence-based decision-making
			  - Goal ambiguity
			  - Political support
			  - Workforce competency
			  - Performance

CHAPTER 4: RESULTS

Quantitative and qualitative analysis revealed insights into the structure and functioning of Montana's Chronic Disease Prevention and Health Promotion Bureau. It is tempting to look for causal relationships between the elements and themes identified in the analysis. However, it is important to remember that this case study reflects a point in time and is designed to be descriptive in nature.   These results suggest that relationships do exist between the elements of the conceptual model, but we cannot infer the exact causal nature of those relationships.

The results are presented in three sections and then synthesized. First, the documents that were included are described and analyzed. The next section reports the quantitative results from the interviews. The third section highlights the qualitative findings from the interviews. Finally, the last section of this chapter relates the comprehensive findings to the original research questions.

Document Review

Three documents were reviewed for this case study. They include the "Bureau of Chronic Disease Prevention and Health Promotion Organizational Chart," the "Montana Chronic Disease Plan," and the "Public Health Framework Assessment Tool (PHFAST)" results collected and reported by the Bureau.

Bureau of Chronic Disease Prevention and Control Organizational Chart

The organizational chart for the Bureau of Chronic Disease Prevention and Health Promotion (Appendix 7) is divided into three levels: Bureau Chief, Sections, and Programs (Figure 3). Section Chiefs report to the Bureau Chief and oversee three to four program areas. Programs generally include a program manager and an epidemiologist. They sometimes also include administrative specialists, data specialists, prevention specialists, or communications specialists.

Figure 3: Basic Structure of the Bureau of Chronic Disease Prevention and Health Promotion
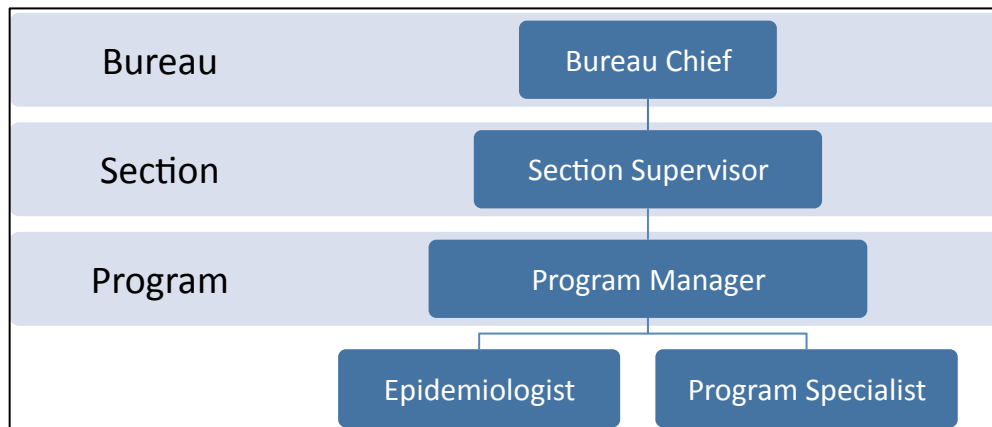
Leadership of the Bureau includes 1 bureau chief, 4 section supervisors, and 14 program managers. While administrative specialists often sit in a particular program, they generally function section-wide and sometimes function bureau-wide. Epidemiologists are also assigned to a particular program, but they identify also as part of a bureau-wide team. There are 57 total positions within the Bureau. There are 6 epidemiologists working in 8 positions (2 epidemiologists support 2 programs each) and there are 7 data/quality improvement/quality assurance specialists.

Montana Chronic Disease Plan

As a deliverable for a grant from CDC, Montana's Chronic Disease Prevention and Health Promotion Bureau developed a document to guide statewide activities related to chronic disease prevention for the next five years called the "Montana Chronic Disease Plan." The components of this plan include roles for state agencies and partners in all sectors. The foundation of this plan is the assertion that "program coordination will increase efficiency, reduce duplication of work, [and] expand and maximize the impact of program activities."

The plan documents the rigor of a performance management system currently in development in Montana. The Division of Public Health Safety is using this system to prepare for voluntary accreditation from the Public Health Accreditation Board. The Bureau of Chronic Disease Prevention and Health Promotion is the first organizational unit within the Division to go through this process and begin using the tools.

The Bureau anticipates that these two directives, performance management and chronic disease coordination, will result in improved organizational effectiveness. Per "The Montana Chronic Disease Plan," these processes together:

> "[provide] opportunities to work together, [promote] collective thinking and problem solving, and [support] working together in new ways so that impact of all chronic disease programs is improved."

Specific elements of these activities are identified as:

> "building the capacity of staff and stakeholders to effectively implement chronic disease activities; increasing chronic disease leadership in cross-cutting skill areas and leveraging shared services; enhancing collaborative processes that establish shared ownership and responsibility; development of a chronic disease communication plan and the Montana Chronic Disease Plan."

<u>Public Health Framework Assessment Tool (PHFAST)</u>

In May 2012, the Montana Chronic Disease Prevention and Control Branch used the

Public Health Framework ASsessment Tool (PHFAST) to examine its organizational capacity

and inform the work towards chronic disease coordination in response to the recent grant

from CDC to all states enabling cross-category action for chronic disease prevention. This

grant enables states to re-envision a system that has historically required that they manage

several siloed categorical programs and move towards a system that allows for efficiencies

and synergies that were previously impossible.

Although PHFAST was originally designed as a tool to generate discussion, the Bureau of

Chronic Disease Prevention and Health Promotion made the decision to pilot it as a survey

tool in order to gather as much input from as large a proportion of their staff as possible.

This was done using SurveyMonkey, a web-based survey tool. The epidemiologist for the

Coordinated Chronic Disease Program in the Chronic Disease Prevention and Health

Promotion Branch analyzed the responses and reported them by staff category of the

respondents. She used two staff categories: management team and

program/administrative staff. Indicators in eight framework domains were rated as: "not

present," "present – weak," "present – adequate," "present – strong," or "don't know."

These categorical ratings were assigned a number, one through four, that served to weight

the responses. "Don't know" responses were treated as missing. A mean response was

calculated for each respondent for each element. The Coordinated Chronic Disease

Epidemiology and the Coordinated Chronic Disease Program Manager shared the summary

data tables with me, including the qualitative comments regarding opportunities and

follow-up as collected by the survey tool. Qualitative comments were not identified by staff

category in the document I received. I calculated the mean overall score. The mean score

by staffing category had already been calculated by the epidemiologist.

The mean overall scores in each PHFAST element suggest that managers and staff are in

agreement regarding the weakest and strongest elements, although the staff consistently

rate each element higher than do the managers (Figure 4).

Figure 4: PHFAST Survey Results

Mean Score

1=Not present, 2=Present-weak, 3=Present-adequate, 4=Present-strong
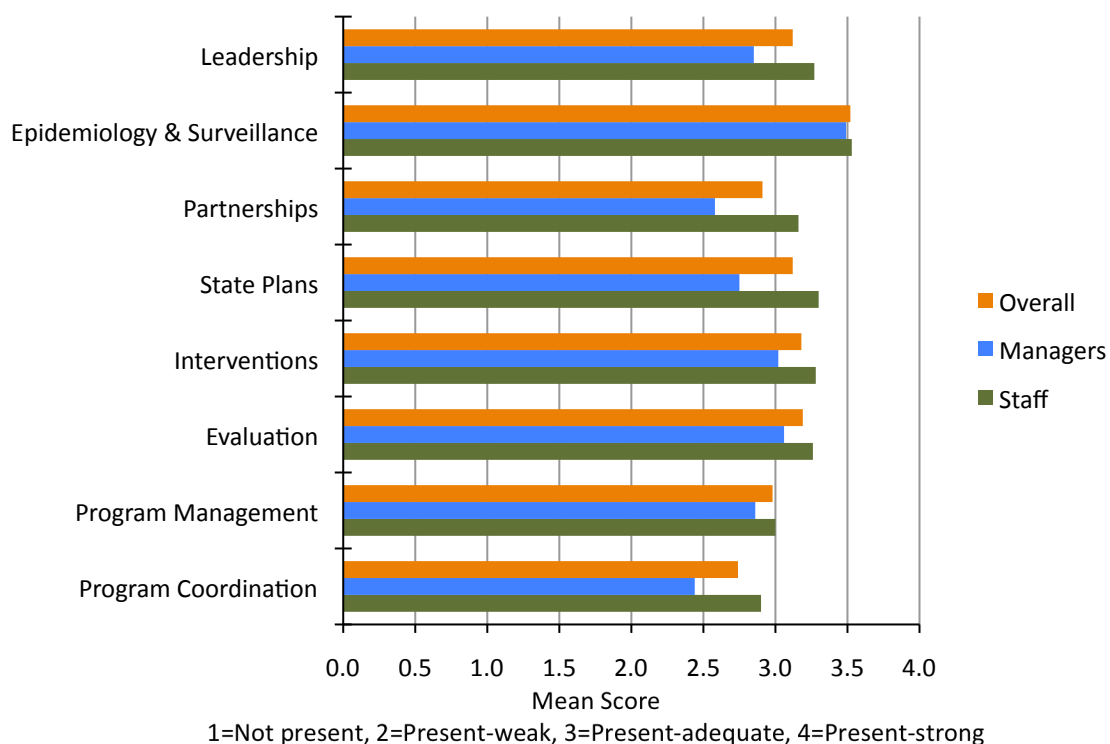
In its traditional use, the PHFAST tool invites users to identify opportunities related

to each indicator in each domain and prompts users to note issues or items for follow-up.

Items for follow-up often include highlighting information to use in further assessment,

identifying resources to assist capacity development in a particular area, researching an

administrative policy or process, or assigning responsibility for a particular task. In the

survey use, responses in the follow-up field seem to lean more towards challenges, which

may be a function of the preceding question regarding opportunities. Interesting themes

emerged in these responses (Table 8).

Table 8: PHFAST Opportunities and Follow-up Themes

Indicators	Opportunities	Follow-up
Leadership	- Improved communication will yield improved leadership. - Program to program communication, program to manager communication, Bureau to policy maker communication all need improvement.	- Missed opportunities using new technologies and social media platforms to share information and increase effectiveness of communications efforts. - Lack a unified voice.
Epidemiology and surveillance	- Developing Bureau-wide journal articles and reports would raise visibility. - Excellent epidemiology and surveillance capacity. - Improvements in dissemination and translation of data will benefit multiple audiences.	- Invite communities and stakeholders to be partners in epidemiology. - Translation for wide audiences.
Partnerships	- Leverage initiatives in other parts of the agency to nurture partnerships. - Identify redundancy in requests to partners.	- Key partners are not included. - Successful partner relationships require more staffing than currently available. - More internal communication needed.
State plans	- Review of plans across categories would be useful. - Too many separate state plans – should be more coordinated.	- Clear measures should be standard in all plans. - Plans should be shared with partners.
Table continues on next page		

Indicators	Opportunities	Follow-up
Interventions	▪ Inconsistent levels of funding and staffing for intervention delivery. ▪ Disparities not addressed in intervention planning.	▪ Communication regarding the evidence supporting decisions should be shared more widely. ▪ Translation of traditional public health approach into other sectors needs more support.
Evaluation	▪ Relevance of evaluation work day to day is unclear. ▪ Intra-bureau dissemination and communication is very important.	▪ Regular communication about evaluation findings is needed. ▪ Internal and external audiences are important.
Program management and administration	▪ Uptake of new technologies is lacking. ▪ New employee orientation specific to the Bureau would be beneficial.	▪ Agency commitment to workforce development is unclear. ▪ Coordination and integration training is necessary.
Program coordination	▪ Leadership commitment is crucial. ▪ Communication is crucial.	▪ Balancing program specific duties with understanding Bureau wide activities is challenging.

Interviews - Quantitative Findings

As described in the previous chapter, open-ended interview questions were paired with Likert scaled response categories. Not only did this serve to focus the discussion and aid in prompting more detail, it also allowed for quantitative analysis of each of the model elements.

Collaboration

Collaboration was assessed through five questions about the extent of collaboration and proficiency of collaboration. Respondents reported a much higher frequency of collaboration within the Bureau (67% frequently or always) than within the Division as a

whole (27% frequently or always). The vast majority of respondents (82%) reported

collaboration with external partners as frequent or always. While most respondents

considered their program's collaborative ability to be at least somewhat strong (85%) and

more than half (53%) rated collaborative ability of their program as very strong, perceptions

of the collaborative ability of the Bureau varied (Figure 5).

Figure 5: Perception of the Bureau's Collaborative Ability
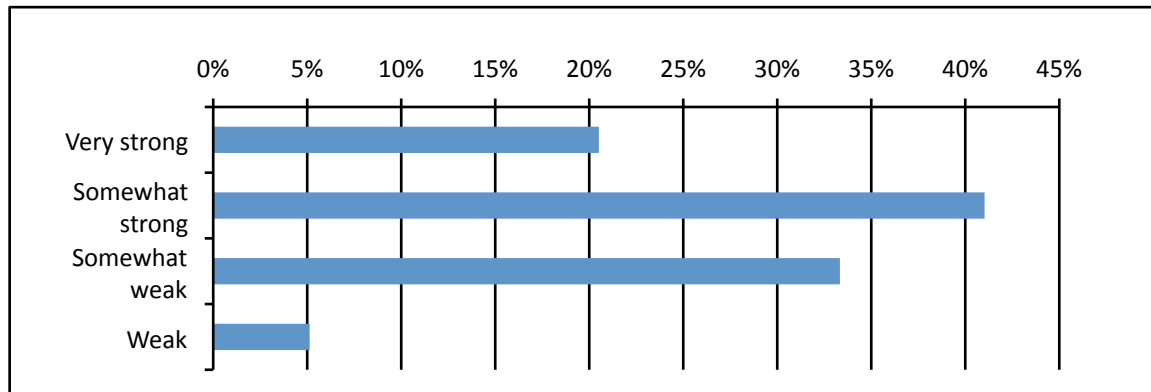
Evidence-Based Decision-Making

Overall, Bureau staff clearly have a great deal of confidence in decision-making (Figure

6).

Figure 6: Confidence in Decision-Making
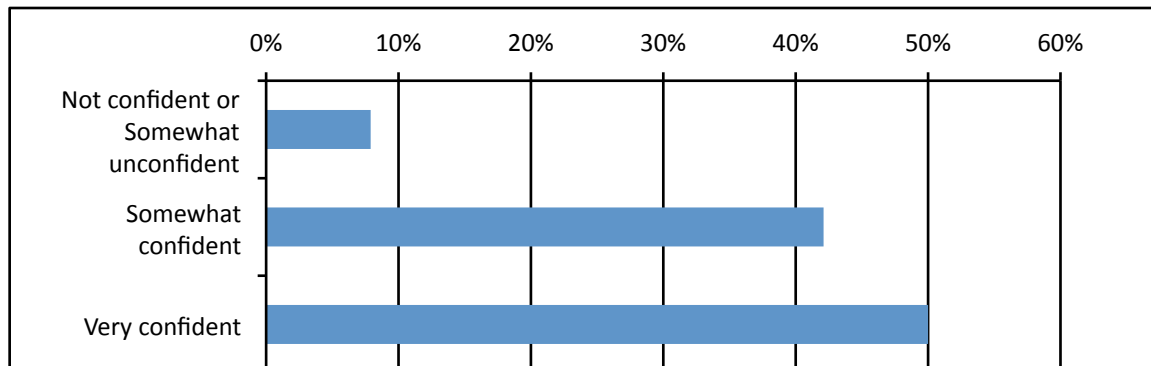
Goal Ambiguity

Respondents reported the greatest clarity in proximal, program goals. Nearly the same proportion of respondents rated both Bureau and Divisional goals as somewhat clear, although Bureau goals received slightly higher responses of both very clear and somewhat unclear/not clear (Figure 7).

Figure 7: Goal Ambiguity by Organizational Level
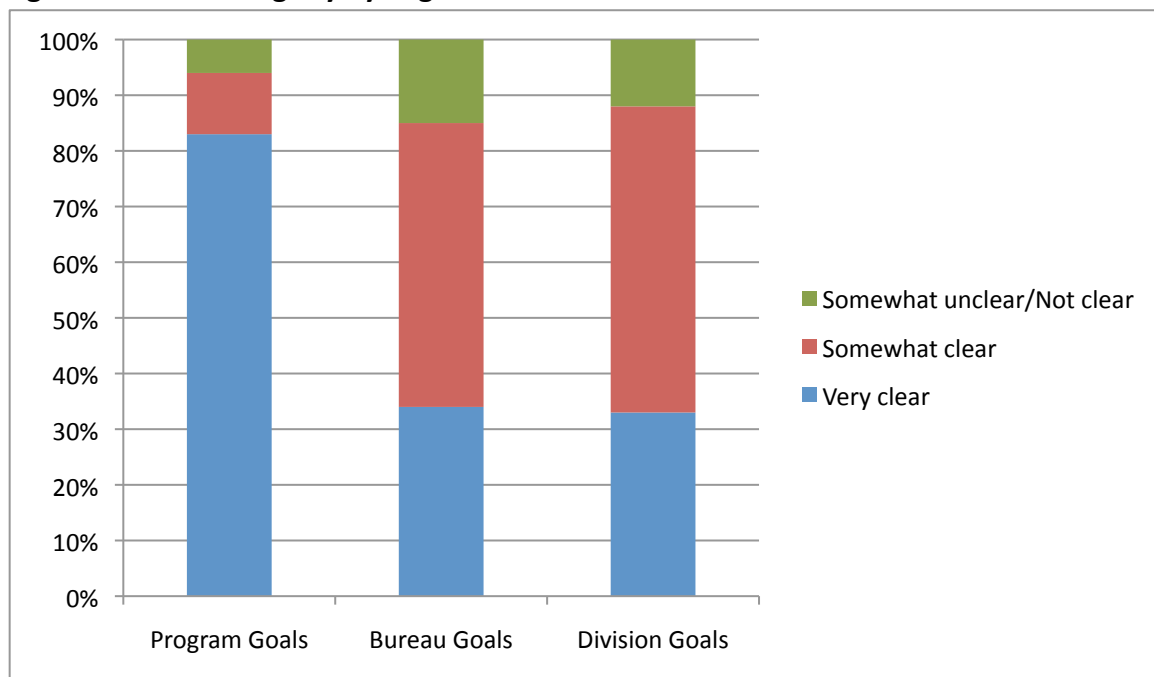
Political Support

Support within the Department of Public Health and Human Services for the work of the Bureau of Chronic Disease Prevention and Health Promotion as well as support for the Bureau from outside the Department are both considered part of political support. Internal support was characterized as stronger than external support (Figure 8).

Figure 8: Internal and External Political Support
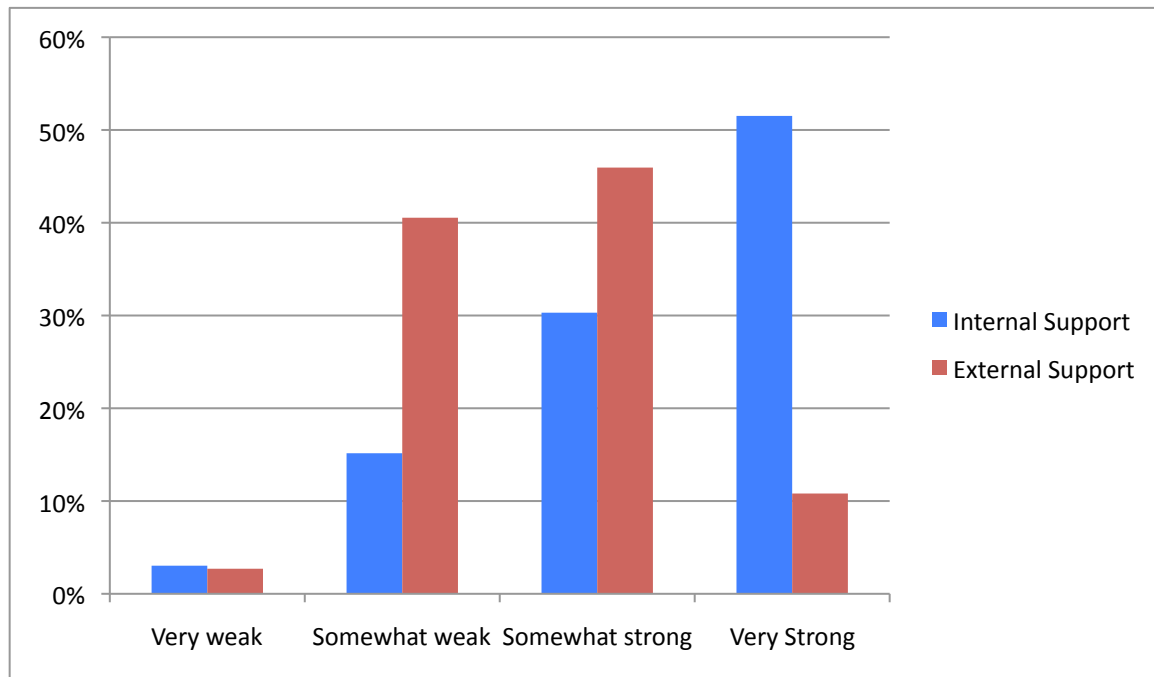
Responsiveness

The Bureau's ability to address emerging needs was rated somewhat strong by 59% of respondents and very strong by 21%. The Bureau's ability to respond strategically was rated very strong or somewhat strong by 90% of respondents.

Workforce Competency

The Division of Public Health and Safety is planning an assessment of the entire workforce in the coming months. To prevent assessment fatigue, we substituted the planned comprehensive assessment with five questions regarding public health education, confidence in self-competency and bureau-wide competency, and access to professional

development. Particularly striking were the results regarding public health education

experience within the Bureau (Figure 9).

Figure 9: Educational Background within the Bureau

Educational Background within Bureau

Category	Value
Other public health	~4
MPH	~6
Not public health	~25
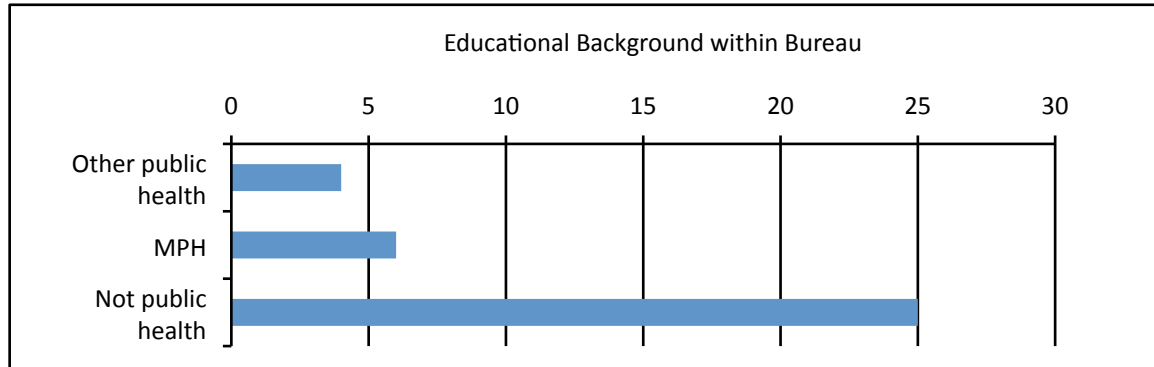
Of the six Bureau employees who have an MPH, four are epidemiologists. An additional four

Bureau employees have public health education other than an MPH. These four are all

program managers. Other public health education experience reported included: health

education, health promotion, community health management, and public health certificates.

Even given the low frequency of public health education within the Bureau, most

respondents were very confident that the skills and knowledge needed to accomplish the

work of the Bureau are indeed present (Figure 10).

Figure 10: Confidence in Bureau-wide Workforce Competency

Confidence in Workforce Competency

Category	Value
Somewhat unconfident	~3
Somewhat confident	~9
Very confident	~29
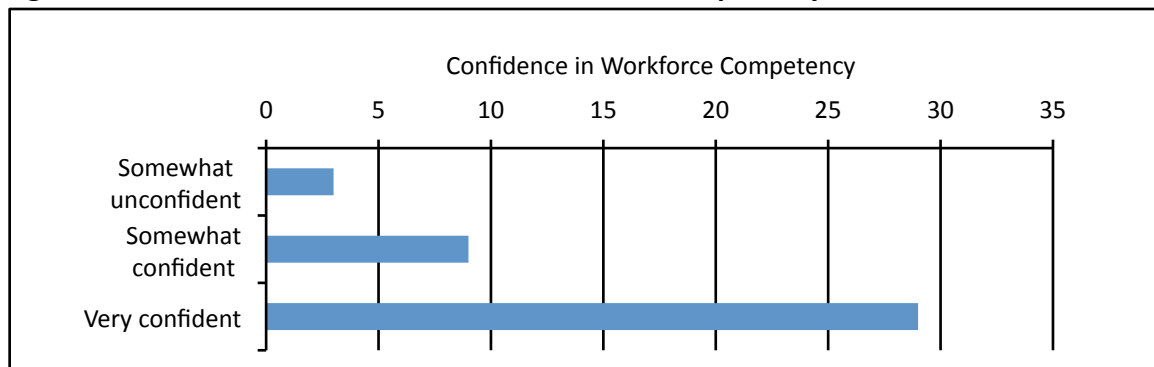
Performance

Effectiveness ratings were high overall and highest at the program level, again increasing with proximity (Figure 11).

Figure 11: Effectiveness by Organizational Level
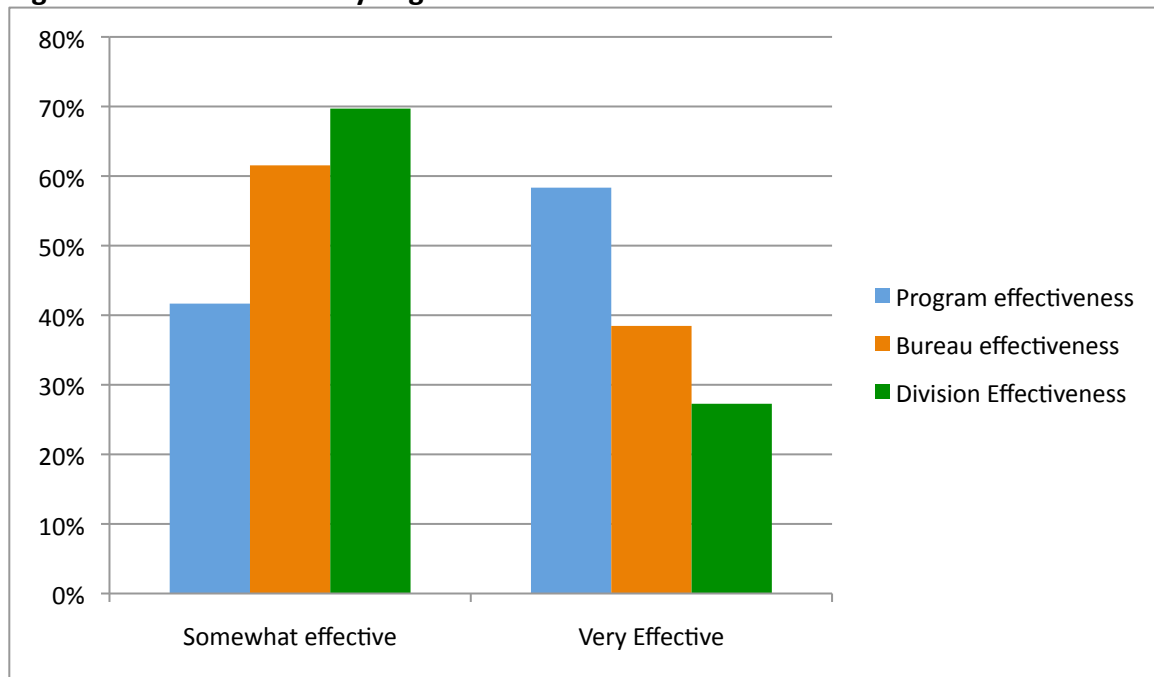
Correlation

Association of the quantitative variables was examined by chi-square analysis (Table 9).

Table 9: Chi-Square Analysis of Conceptual Model Elements

	Evidence-based Decision-making	Goal Ambiguity	Political Support	Responsiveness	Workforce Competency	Effectiveness
Collaboration	22.49 (df 16)	*22.97* (df 12)*	*28.97* (df 16)*	*33.82* (df 16)*	8.77 (df 8)	1.6 (df 4)
Evidence-based Decision-making		*36.10* (df 12)*	16.44 (df 16)	*32.38* (df 16)*	9.91 (df 8)	6.86 (df 8)
Goal Ambiguity			13.64 (df 12)	15.97 (df 12)	7.48 (df 6)	9.29 (df 6)
Political Support				8.48 (df 16)	7.17 (df 8)	5.41 (df 8)
Responsiveness					5.84 (df 8)	6.22 (df 8)
Workforce Competency						2.54 (df 4)
*Statistically significant ≥ 95% confidence						

Workforce competency and effectiveness did not show a statistically significant association with any of the model elements. Associations between collaboration and goal ambiguity, collaboration and political support, collaboration and responsiveness, evidence-based decision-making and goal ambiguity, and evidence-based decision-making and responsiveness each were statistically significant with at least 95% confidence. The nature of these relationships is unknown. For each pair, we can expect a change in one element would be associated with a change in the other. However, whether it is a direct relationship or an indirect relationship and whether one change causes the other is not elucidated in this case study.

Interviews - Qualitative Findings

These qualitative findings are a product of the open-ended interview questions. Study participants were asked a series of questions aimed at documenting their opinions about

the performance of the Bureau of Chronic Disease Prevention and Health Promotion in each element of the conceptual model.

Collaboration

Collaboration was examined through a series of five questions (Appendix 4). Aspects of the Bureau that were reported as facilitating collaboration included culture and a willingness to pitch in to help each other, open and regular communication, physical proximity to each other, and leadership at the Section, Bureau, and Division levels. External respondents noted specifically that the Bureau's practice of approaching collaboration purposefully and strategically helped these partners understand how they could contribute, and trust that their time would not be wasted. The Division's new integrated performance management system was also identified as supporting collaboration. This system is organized around the work being done and not around organizational structure.

Collaboration is influenced both negatively and positively by funder involvement, especially in the case of CDC. CDC's National Center for Chronic Disease Prevention and Health Promotion is working to encourage coordinated chronic disease prevention and health promotion within state health departments. Montana is leveraging CDC's grant for coordinated chronic disease prevention into support for collaborative approaches within the Bureau. However, guidance from CDC's categorical programs is sometimes at odds with broader collaboration and rather than encourage a coordinated approach, it reinforces existing position bias related to the categorical silo.

Collaboration was valued as a method to improve effectiveness. Respondents noted that collaboration had a positive impact on workforce development and mentoring. The collaborative culture of the Bureau was credited with encouraging individuals to seek out advisers and peer-to-peer learning opportunities. This was true for learning new skills or quick information sharing as well as longer term mentoring for new managers.   This has resulted in efficiency in data and information sharing that minimized the need for collaborators to "reinvent the wheel."

Identifying an appropriate balance between specialization and shared tasks and expertise emerged as an important component of successful collaboration. Some specialist groups meet across program areas. This allows each individual to develop specialized knowledge in a program area and share skill-based knowledge across programs. Program-based finance analysts meet regularly as a Bureau-wide group. Epidemiologists meet regularly in the Bureau and regularly but less often across the Division. Some respondents expressed a desire to engage other specialist groups across programs such as health promotion specialists or communications specialists.

Evidence-Based Decision-Making

Evidence-based decision-making was explored through three open ended questions (Appendix 4). Nearly all respondents reported that within the Bureau, there is a clear expectation of evidence-based decision-making. Per Bureau culture and practice, the typical decision-making framework includes documenting needs and pairing them with programs, processes, and interventions that have the strongest likelihood of success.

Sources of evidence cited include peer-reviewed literature, Cochran Reviews, the Guide to Community Preventive Services, the US Preventive Services Task Force recommendations, and guidance or direction from federal agencies including CDC, NIH, and SAMSHA. Other sources of input include coalition and stakeholder recommendations, surveillance data, evaluation data, and performance forecasting. Logic models were identified as a tool to assist in evidence-based decision-making.

Translation was identified as a sometimes difficult component of evidence-based public health practice. This seems to be true when interventions exist but have been created for demographics that vary substantially from Montana, or when interventions do not yet exist. While traditional public health literature is well employed, literature and expertise from fields such as sociology and communications are not often used.

Positive influences on evidence-based decision-making included a culture of accountability, clear expectations, open and empowered leadership, weighing alternatives against program and Bureau goals, and frequent communication. Senior leadership of the Bureau and the Division began their careers in the programs within the Bureau. This seems to have imbued the leadership with a certain level of implicit expertise, resulting in confidence from the staff that decisions are based in solid evidence.

Goal Ambiguity

Goal ambiguity was investigated through three open-ended questions (Appendix 4). Most respondents rated proximal goals as having more clarity than distal goals. While they

stated that their immediate program goals were very clear, the objectives became less obvious at the Bureau level, and even less apparent at the Divisional level (Figure 12).

Figure 12: Goal Ambiguity by Structural Level

Program Goals:	• "I know exactly where we are going and our work plan supports that."
Bureau Goals:	• "I can make assumptions about Bureau Goals but it isn't talked about."
Division Goals:	• "I know we have some..."
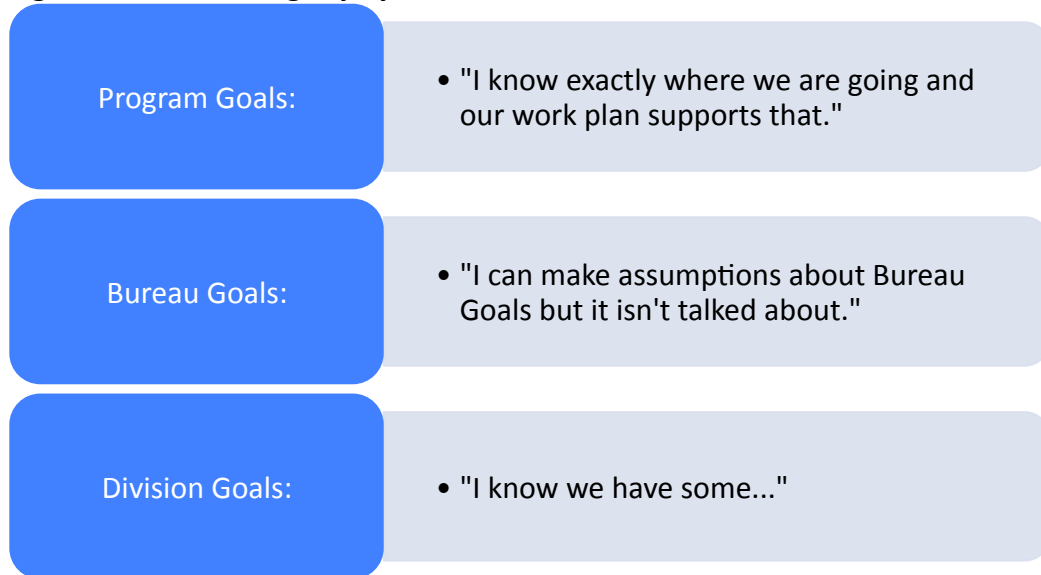
Characteristics contributing to goal clarity included funder instructions defining goals, training offered by the Coordinated Chronic Disease Program, the Public Health Accreditation Board accreditation preparation process, program maturity, coordination, and communication. Several respondents noted that for CDC-funded programs, the CDC-mandated work plan was more pertinent to their daily work than organizational goals at any level. Many respondents were not sure that organizational goal clarity at the program, Bureau or Division level was important; they felt they were able to successfully complete their job tasks without such clarification.

> "Sometimes I'm not filled in until a decision is made and don't really know why something is happening the way it is. But do I need to know why? Probably not."

As described in Chapter 2, Stazyck and Goerdel found that increased goal clarity improved the effectiveness of a public health agency.[81] It may be that these individuals would become even more effective if their understanding of organizational goals were to grow.

Political Support

Political support was explored in two open-ended questions (Appendix 4). Perceptions of political support were less concrete than those of other elements. In the 2011 legislative session, the Montana State Legislature defunded the tobacco prevention program, resulting in the substantial loss of four positions and a reduction of almost half the budget. Many in the Bureau still feel wary and lack confidence in the support of the Director, the Department of Public Health and Human Services, the Governor's Office, or the Legislature. A new Governor was elected in November and a new Department Director has been appointed. A new legislative session opened in January 2013 and many respondents expressed curiosity about the new administration's potential support. All respondents talked about the strength of leadership at both the Bureau and Division level during the 2011 legislative session and the commitment of leadership to protect staff as best as they could. Communication, collaboration, and the new performance management system were identified as elements that have or could help strengthen political support.

Foundation, stakeholder, and advocate support was described as disorganized by both internal and external respondents. Several internal respondents suggested that the Bureau and the Division might have a role to play in strengthening support and coordination with external partners. Support in this context did not reference funding for external partners

but rather access to information, a shared agenda, and consistent messaging. Pre-work including communication, consistent and collaborative messaging, and partner-mobilization may be part of that role.

Responsiveness

Responsiveness was explored with four open-ended questions (Appendix 4). Respondents attributed the responsiveness of the Bureau in part to strong leadership and a culture of collaboration and communication. Workforce capacity has been built specifically to facilitate grant writing and procurement. Strategic planning has resulted in a priority list of proposal topics ready to be matched with opportunities.

Respondents did identify some challenges to responsiveness, including a lengthy hiring process, which impedes the ability to build staff capacity in a timely manner and creates a lag time to start new activities. The data collection and reporting process can also be slow, resulting in data that is not as current as decision-makers and funders would like it to be. Even given the priority list of proposal topics, some respondents also reported a sense that some opportunities have been missed. Occasionally, the strategies used to ensure responsiveness are met by resistance from funders. The Bureau has used the strategy of securing contractors to begin work on a grant-funded project during a hiring freeze, but received pushback from CDC, which did not approve of that strategy.

Overall, there is a culture of staff willing to pitch in and act when an opportunity or challenge is presented. In one case, a state-wide assessment identified arthritis as a concern. The Bureau was able to document the public health need, match the need with an

evidence-based intervention, and secure funding from a national partner appropriate to both the need and the intervention.

<u>Workforce Competency</u>

Workforce competency was explored through four open-ended interview questions (Appendix 4). There is clear support from leadership for training, but it has largely been left up to individuals to identify their own needs and find appropriate opportunities to fulfill their needs. Out-of-state travel is prohibited by the Department of Public Health and Human Services. Bureau and Division leadership are willing to approve vacation requests so that staff can use their own time and resources to access out-of-state opportunities, but this policy is not feasible for everyone. The travel restriction isolates Montana's chronic disease staff, and prevents them from attending national training sessions and networking with peers from other states. This decreases their access to cutting edge public health practices that could ultimately benefit the department and the state's citizens.

The Coordinated Chronic Disease Program has begun to look at workforce competency systematically, and has developed training opportunities for the bureau accordingly including a communications training and an epidemiology journal club. Additionally, the Division is planning a comprehensive workforce competency assessment this spring as part of the accreditation preparation process.

<u>Performance</u>

Performance was investigated with seven questions (Appendix 4). Respondents were asked to identify evidence of effectiveness, recommendations to improve effectiveness, and recommendations for an ideal structure to facilitate effectiveness. Indicators of effectiveness cited by respondents included visibility in the media, implementation of evidence-based programs, progress towards grant objectives, and documentation of meeting quantifiable outcomes.

Characteristics that they associated with effectiveness included elements of the conceptual model: collaboration, evidence-based decision-making, goal ambiguity, hierarchical authority, and workforce competency. In contrast to the correlation analysis, the qualitative data did support the model proposed by Stazyk and Goerdel[81] and suggested that goal ambiguity and low political support can undermine effectiveness.

- <u>Collaboration:</u> Proximity to each other was frequently identified as a facilitator to effectiveness. Collaboration and frequent, consistent communication processes have helped make the Bureau effective.

- <u>Evidence-based decision-making:</u> Evidence-based planning relies on program logic models and goals such as Healthy People 2020.

- <u>Goal ambiguity:</u> The accreditation preparation process establishes and communicates clear standards and policies that aid effectiveness.

- <u>Hierarchical authority:</u> Administrative approval processes were resoundingly identified as detrimental to effectiveness. Respondents appreciated the Bureau and Division leadership's work to protect the Bureau from the bureaucracy challenges of

51

the Department of Public Health and Human Services. The structure of the Bureau allows for specialization which complements the collaborative culture and initiatives of the Coordinated Chronic Disease Program. Bureau staff have a large amount of control over their own work which was perceived as beneficial. However, although Stazyk and Goerdel suggest that centralization and bureaucracy facilitates effectiveness[81], respondents found hierarchical authority to be a barrier to effectiveness. This was true especially in the areas of communications approval, travel approval, and decision-maker education.

- <u>Workforce competency:</u> There is a skilled workforce in place.

Opportunities to improve effectiveness built on these same themes. The physical work environment, while convenient for collaboration, is not pleasant and is not conducive to creativity. Recommended improvements included lower cubicle walls, more vibrant colors, common areas open for networking and strategizing, and better lighting. Respondents looked forward to continuing to improve the consistency of internal communications and structuring collaboration opportunities. Crafting consistent messages across programs would help extend reach and visibility, and shared calendars would help identify opportunities and promote openness and teamwork.   Instead of relying on contractual relationships, reciprocal partnerships could be further developed with local health departments and non-governmental organizations throughout the state. Technology could be leveraged in more innovative and entrepreneurial ways; the epidemiologists and financial specialists are already networked. Similarly, organizing regular meetings for other

program staff around risk factors, co-morbidities, intervention types, special populations, or channels could result in improved outcomes. Simplified, streamlined approval processes would enable the Bureau's programs to respond more quickly to emerging challenges and opportunities.

Synthesis

Five study questions were defined at the outset of this investigation. Examining each of the sources and types of data collected in aggregate yields a more complete picture than any individual analysis alone.

1. How is the state health department's chronic disease prevention and control unit structured?

The formal reporting structure of the Bureau of Chronic Disease Prevention and Health Promotion, documented above, includes more leadership and specialized skill capacity at the individual program level than other Bureaus in the Division of Public Health and Safety. This structure is believed to be supportive of program specific specialization that complements collaborative approaches.

2. What are the perceptions of managers, internal stakeholders, and external stakeholders regarding the effectiveness of the chronic disease unit?

Managers, internal stakeholders, and external stakeholders were in agreement that the Bureau of Chronic Disease Prevention and Health Promotion performance was somewhat to very effective. In general, respondents rated program effectiveness above Bureau

effectiveness and Bureau effectiveness above Division effectiveness. This may be related to

a similar finding regarding goal ambiguity. Goal ambiguity increased as from program to

Bureau to Division. As goal ambiguity increases, understanding of performance goals may

decrease, which in turn may decrease a respondent's confidence that the goals are being

met effectively.

3. What do managers, internal stakeholders, and external stakeholders believe are the
structural factors that influence the unit's effectiveness?

Structure supports collaboration when potential collaborators are proximal to each

other in terms of where they sit in the building, where they reside in the organizational

chart, and how closely aligned their task and content expertise are.

Respondents appreciated the program specialization inherent in the formal structure and

cited this as complementary to collaborative activities. Three formal collaboration

initiatives were cited as facilitating effectiveness.

Epidemiology networking: The presence of epidemiology staff embedded in programs was

identified as a strength of the Bureau, enabling the rapid and systematic use of data for

decision-making. This is coupled with regular meetings that allow epidemiologists to learn

from and support each other. This is structured in part around a journal club that allows

participants to apply knowledge in ways that may be different from their day-to-day work

and therefore may help them build skill.

Finance and logistics networking: Just as the epidemiologists meet regularly, so do the finance and logistics specialists. This meeting is designed to assist in problem solving and identify systems level changes to support systems improvement Bureau-wide.

Coordinated Chronic Disease Program: This program has taken leadership for identifying opportunities for collaboration that may enhance Bureau effectiveness. Using communication strategies, this program facilitates connections that leverage the specialization and general skill areas that each program may benefit from.

4. How are these beliefs consistent with the elements included in the conceptual model?

Although the correlation analysis did not show a significant association between effectiveness and any of the elements in the conceptual model, qualitative response indicates a belief that evidence-based decision-making, goal ambiguity, political support, responsiveness, and workforce competency all facilitate effectiveness and that collaboration facilitates each of those elements. Structure was identified as an influence on collaboration, responsiveness, goal ambiguity, and hierarchical authority. However, culture, leadership, and physical proximity also play a role that may mitigate the effects of structure, enhance the effects of structure, or be amplified by structure.

<u>5. How well do both the PHFAST and the NACDD Workforce Competency Assessment Tool inform the proposed conceptual model?</u>

As mentioned in the previous chapter, the NACDD Work Force Competency Assessment Tool was not used in this study. The results collected by the Bureau via PHFAST are consistent with the findings of the examination of the conceptual model. However, PHFAST does not allow for testing of its domains against effectiveness.

Results Summary

The results of this case study examination suggest that the conceptual model elements are related to each other (Table 10: Findings by Conceptual Model Elements). The results of the correlation analysis do not correspond with the model proposed by Stazyk and Goerdel.[81] In their work drawing on resource dependence and contingency theories, Stazyk and Goerdel proposed and then showed that hierarchical authority in health and human services bureaucracies could moderate the negative effects of goal ambiguity and low political support on organizational performance. The qualitative analysis suggests additional relationships among the attribute and practice elements examined in this cased study however causality cannot be determined. In concordance with Stazyk and Goerdel, these results suggest that political support and goal ambiguity influence effectiveness but there are no findings regarding a relationship between hieratical authority and political support or goal ambiguity or between hierarchical authority and effectiveness. This study did not prove that the model proposed by Stazyk and Goerdel cannot appropriately be applied to state health department chronic disease units; this is an area requiring further

study. The practice element collaboration influences the other two practice elements (evidence-based decision-making and responsiveness) and two of the attribute elements (political support and workforce competency). The attribute element organizational structure influences two practice elements (collaboration and responsiveness) and one attribute element (hierarchical authority). Two practice elements (evidence-based decision making and responsiveness) and three attribute elements (goal ambiguity, political support, and workforce competency) influence effectiveness.

Table 10: Findings by Conceptual Model Elements

	ED	RE	GA	HA	OS	PS	WC	EF
CO	CO	CO ★	CO ★		OS	CO ★	CO	
ED		★	★					EF
RE					OS			EF
GA					OS			EF
HA					OS			
OS								
PS								EF
WC								EF

Legend:
CO = influenced by Collaboration
EF = influences Effectiveness
OS = influenced by Organizational Structure
★ = statistically significant correlation

Element abbreviations:
Practices: CO=Collaboration, ED=Evidence-based Decision-Making, RE=Responsiveness
Attributes: GA=Goal Ambiguity, HA=Hierarchical Authority, OS=Organizational Structure, PS=Political Support, WC=Workforce Competency
EF=Effectiveness

However, the pathway of effect is more complicated than proposed in the original conceptual model. The simplified original conceptual model proposed that attribute elements might influence practice elements and together these might influence organizational performance and therefore public health effectiveness. It seems rather that there may be a direct interrelationship between some of the practice elements and that some attribute elements may contribute directly to effectiveness (Figure 13: Conceptual

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Model Element Relationships). Three additional factors (culture, communications, and leadership) emerge as influencing effectiveness, but their position and role in the conceptual model is unclear.

Figure 13: Conceptual Model Element Relationships
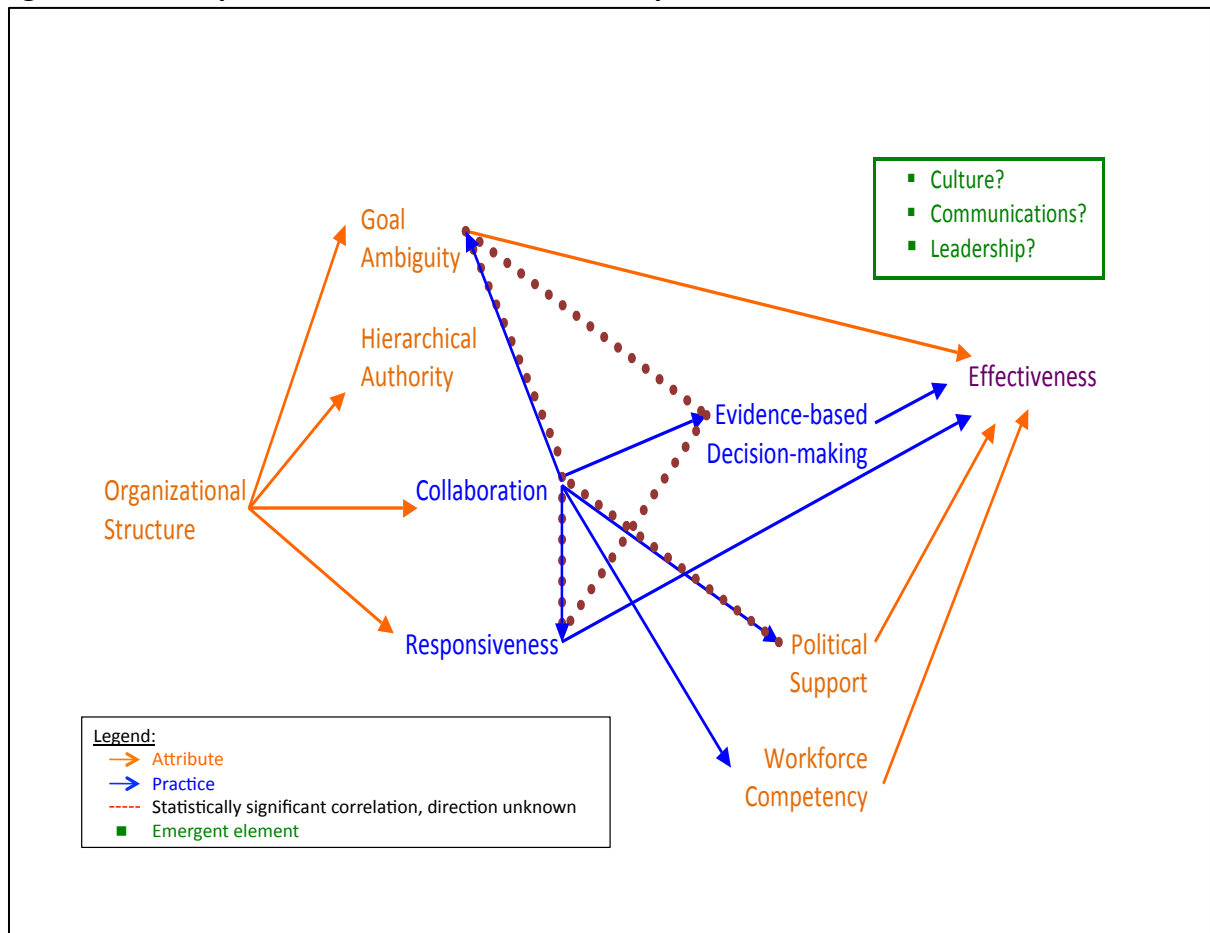
CHAPTER 5: PLAN FOR CHANGE

This study has served both to document a point in time for Montana's Bureau of

Chronic Disease Prevention and Health Promotion and to explore the elements of the

conceptual model that may facilitate effectiveness for chronic disease units in other states,

other units within state health departments, and public health agencies at other levels. The

results of the qualitative and quantitative analysis suggest interrelationships between the

elements of the model rather than a simple linear cause and effect pathway. These findings

identify levers around which capacity can be built that may strengthen the effectiveness. I

propose the following for immediate action:

1. Recognize organizational capacity as a key component of public health effectiveness.

2. Nurture unit level capacity development.

3. Reorient partner relationships.

State and local health departments, schools of public health and other academic

institutions, the National Association of Chronic Disease Directors, and the Centers for

Disease Control and Prevention each have an important role to play in furthering this work.

Within state health department chronic disease units, creating a culture that values

evidence-based innovation, communicating a clear vision, and employing collaborative

leadership practices will be instrumental for chronic disease directors who seek to strengthen the effectiveness of their units. Schools of public health and other academic institutions are in a unique position to influence the evolution of practice-based research and literature, and to prepare future public sector public health leaders for success. The National Association of Chronic Disease Directors, the Centers for Disease Control and Prevention, and their partners can support technical assistance, strategic leadership, and organizational capacity development that align with the emerging evidence-base. The voluntary accreditation process in progress under the direction of the Public Health Accreditation Board offers further opportunity to build the science informing our understanding of the levers of organizational effectiveness in public health. New wisdom emerging from the accreditation process itself, practice-based literature growing out of new applications of quality improvement methods, and longitudinal observation of accreditation measures will allow us to continue study of the organizational attribute and practice elements of the conceptual model investigated in this case study on a larger scale.

Kotter's process for leading change[47] and Yukl's guidelines for increasing organizational learning and innovation[91] offer some direction on how leadership at all levels may facilitate these activities and build unit capacity. Specifically, communicating the vision, creating entrepreneurial networks, empowering broad-based action, encouraging risk taking, learning from surprises and failures, and anchoring new approaches in culture are strategies that may enable public health leaders to build on the findings of this case study and maximize the positive impact of the organizational attribute and practice elements that influence the effectiveness pathway.

Recommendation #1: Recognize organizational capacity as a key component of public sector public health effectiveness.

The Public Health Accreditation Board's work and the fast uptake of the voluntary processes they have developed are evidence of a general consensus that we must continue to regard organizational capacity as fundamental and work to maintain an adequate competency for public sector public health agencies. The literature informing our understanding of public health structure and function must go deeper and must include both empirical and practice-based learning. The literature describing evidence-based leadership and organization of state health department chronic disease organizations is sparse.

1.1   **Identify professional competencies regarding organizational capacity management for public sector public health leaders.** Several sets of professional competencies exist for public health practitioners. In light of the findings of this case study and the emerging knowledge from public health agency accreditation work, competency sets should be reviewed and assessed for coverage of organizational capacity leadership and management skills.

1.2   **Increase understanding of the role of public sector agencies among all public health professionals.** Graduate level public health study often does not give students an explicit opportunity to examine the role of the public sector in the larger public health network. Although many public health

practitioners spend at least part of their career in the public sector, many

public health researchers do not.

1.3 **Develop a research agenda.** Further study of this conceptual model

examining changes in structure alongside changes in operations, practices,

and attributes is necessary in order to identify the nature of these

relationships more specifically. Future work should apply the resulting model

in different health departments and in different organizational units within

health departments – such as emergency preparedness, communicable

diseases, injury prevention and control, environmental health, and maternal

and child health.

1.4 **Expand the breadth of evidence used to innovate public health practice.**

The fields of communication science, adult learning, organizational behavior,

and management are among the fields that may offer previously untapped

knowledge about how to develop prevention interventions and how to best

attend to organizational capacity development.

1.5 **Develop and test performance measures.** Conceptual model elements

should be the foundation for a set of performance measures that can be

used to track changes in capacity and assess the impact of those changes on

effectiveness.

1.6 **Share best practices.** In addition to sharing experiential wisdom about

effective population-based health interventions, managers at all levels

should be encouraged to share management and leadership best practices.

These stories should include discussions of what has not worked as well as what has, and the resulting changes in performance measures of the elements of the conceptual model.

1.7   **Build the practice literature.** A set of practice literature that documents management and leadership in chronic disease units is sorely needed. CDC, NACDD, and other national groups should encourage and facilitate the creation and publication of this documentation.

Recommendation #2: Nurture unit level capacity development.

Montana's experience preparing for accreditation and developing a more coordinated approach to chronic disease prevention and health promotion illustrates innovation in communication and collaboration that can be leveraged for unit capacity. Attention to the culture created, communication strategies, and leadership development may be applied not just at the chronic disease unit level but at all levels of public health practice.

2.1   **Cultivate subject matter experts.** While there is a large epidemiology presence in the Bureau, other disciplines are less well represented. Identify individuals with specific expertise or interest that can be cultivated and shared with the larger group. Special populations, communications theory, policy analysis, health promotion/health education are examples of areas that might benefit from a subject matter expert.

2.2   **Create more practice groups.** Practice groups, similar to those for

epidemiology and finance/logistics, offer skill development and application,

group problem solving, and professional support. A practice group could be

organized around a particular channel such as schools, a particular strategy

such as communications, a particular population such as tribes, a particular

risk factor such as physical activity, or co-morbidities. Practice groups could

also serve as subject matter experts.

2.3   **Establish solution generating task forces.** Short assignment task forces can

be used to bring together individuals with different expertise to solve a

particular problem. For example, if the Bureau has identified that stroke

patients are not getting aspirin during emergency care, a task force could be

assigned to do a quick turn-around proposal to address the issue. The task

force might include a communications expert, an evaluation expert, a

planning expert, an emergency services systems expert, and stroke

prevention expert from different parts of the Bureau. They would meet for a

few hours over a short amount of time to come up with a proposal for the

Bureau about how to address the problem.

2.4   **Develop emerging leadership.** Leadership played a key role in how all

elements of the conceptual model were experienced by respondents.

Emerging leaders, particularly at the program level, may be best positioned

to mitigate the effects of a position bias that has historically been funder-oriented to one that is state-oriented.

2.5 **Enhance training opportunities.** Systematically identify professional development needs and create opportunities that leverage technology and state of the art learning. Working with national agencies and organizations and other states, link Bureau staff with mentors and experts for ongoing consultation that inspires innovation and growth.

Recommendation #3: Reorient partner relationships.

Public health has a long history of employing partnerships to extend reach, leverage influence, and maximize capacity. Some organizations become partners because they fund or are funded by the state health department. Some organizations become partners due to their status as stakeholders and advocates for public health agencies. Building relationships that are not focused on a funding dynamic allows the state health department chronic disease unit to more fully leverage the specialized knowledge and expertise present in the larger network of the public health system and helps to create a system that can respond effectively and strategically to emerging opportunities and challenges. Acting on this recommendation will strengthen the work done in the above recommendations.

3.1 **Engage leadership in supporting collaboration.** Leadership plays an important role in creating a culture supportive of collaboration and identifying strategic opportunities where collaboration will benefit the work by increasing reach or efficiency. Leaders should be clear about the plan for

action, the steps necessary for success, and keeping staff and other stakeholders apprised.

3.2   **Expand partnerships.** Partnerships with community-based organizations, local health departments, advocacy groups, academic institutions, and others should not be limited to contracting, licensing, and legislative activities. Identifying shared interests, mapping expertise and capacity, and developing a strategic agenda for collaboration with external stakeholders will extend strengthen the Bureau's work in all areas of the conceptual model and increase the reach of its programs.

I look forward to continuing this work and contributing to achieving each one of these recommendations. My immediate role is three-fold:

- Develop and disseminate technical assistance.
- Develop this work for publication in the practice-based literature.
- Advocate for research and education in academic public health.

To begin with, I will work with my colleagues in the National Association of Chronic Disease Directors and the Centers for Disease Control and Prevention to build on the findings of this study to develop and disseminate technical assistance packages for state health department chronic disease units. Using my experience facilitating communities of practice and Montana's experience with small groups for decision-making, information, sharing, and skill building, I will create a set of tools including a project brief that describes

practice groups and their application and the leadership strategies for implementing them; recommendations for methods of identifying appropriate practice groups to implement; and recommendations for assessing the impact of the practice group on organizational effectiveness.

In addition, I will work with my committee to develop the findings of this case study examination into an article appropriate for publication in the peer-reviewed literature. Yukl's recommendations for increasing organizational learning include documenting surprises and failures.[91] I will use my experience documenting this case study in the literature to lead by example and to create a brief for state health department chronic disease staff on how to contribute to the practice literature.

And, closest to my heart, I will advocate with schools of public health, starting with the DrPH Program of the Gillings School of Global Public Health, to begin adding state health department case examples in the management and leadership curriculum. Applying Kotter's process for leading change[47], this will begin to change the culture of public health leadership education and academic study to include a focus on management and leadership in the public sector. The case examples will emphasize the leadership skills, communication strategies, and organizational attributes and practices that come into play in public sector public health practice.

APPENDIX 1: LITERATURE REVIEW SUMMARY

Citation	Inclusion criteria	Type	Relevant conclusions
Anderson LM, Brownson RC, Fullilove MT, et al. Evidence-based public health policy and practice: Promises and limits. Am J Prev Med. 2005;28(5S):226-230.	√ Function linked to effectiveness √ State health departments √ Chronic disease prevention and control	Review and commentary	Non-empirical Evidence-based decision-making has the potential to improve population health with limited resources. Evidence develops over time and effectiveness will be impacted accordingly.
Association of State and Territorial Health Officials. Understanding state public health: A project of the Association of State and Territorial Health Officials. Whitepaper. 2007.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Whitepaper	Non-empirical The authors reference knowledge gaps in the effectiveness/accountability literature related to state health departments.
Baker EL, Koplan JP. Strengthening the nation's public health infrastructure: Historic challenge, unprecedented opportunity. Health Affairs. 2002;21(6):15-27	√ Function linked to effectiveness √ State health departments	Review and commentary	Non-empirical Assumes a well-functioning infrastructure yields effectiveness. Workforce identified as key component of well-functioning infrastructure.
Baker EL, Potter MA, Jones DL, et al. The public health infrastructure and our nation's health. Ann Rev Public Health. 2005;26:303-3-18	√ Function linked to effectiveness √ State health departments	Review and commentary	Non-empirical Precarious funding identified as damaging to effective public health practice. Workforce competency identified as important to effective public health practice.

Citation	Inclusion criteria	Type	Relevant conclusions
Ballew P, Brownson RC, Haire-Joshu D, et al. Dissemination of effective physical activity interventions: Are we applying the evidence? Health Education Research. Oxford University Press. 2010.	√ Function linked to effectiveness √ State health departments √ Chronic disease prevention and control	Case-control study	Empirical Defined effectiveness as using evidence-based public health. Infrastructure stability (budget cuts and newness of staff) affected organization's ability to implement evidence-based programs. Training affected organization's ability to implement evidence-based programs.
Barnett DJ, Balicer RD, Blodgett D, et al. The application of the Haddon Matrix to public health readiness and response planning. Environmental Health Perspectives. 2005;113(5):561-566.	√ Function linked to effectiveness √ Function linked to structure √ State health departments	Testing model with hypothetical cases	Non-empirical Understanding roles, training, practicing skills, quality improvement processes are part of the Haddon Matrix application to public health emergency readiness. Risk assessment is part of the Haddon Matrix and is related to ability to respond. Role identification, communication, willingness, and collaboration are identified as organizational culture factors.
Beitsch LM, Brooks RG, Grigg M, Menachemi N. Structure and functions of state public health agencies. AJPH. 2006;96(1):167-172.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Survey	Non-empirical Asserts that declining infrastructure and function of state health departments negatively impacts public health system performance. Chronic disease epidemiology listed as an emerging area of public health practice for 85% of state health departments in 2001.
Beitsch LM, Brooks RG, Menachemi N, Libbey PM. Public health at center stage: New roles, old props. Health Affairs. 2006;25(4):911-922.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Survey	Non-empirical State infrastructure components identified: state full time equivalents, state budget contribution, federal contribution, state per capita public health budget, total state and local per capital spending.

Citation	Inclusion criteria	Type	Relevant conclusions
Bender K, Halverson PK. Quality improvement and accreditation: What might it look like? J Public Health Management & Practice. 2010;16(1):79-82.	√ Function linked to effectiveness √ Function linked to structure √ State health departments	Review and commentary	Non-empirical Alludes to responsiveness to emerging issues and evidence-based decision-making as important characteristics of effectiveness.
Bhandari MW, Scutchfield FD, Charnigo R, et al. New data, same story? Revisiting studies on the relationship of local public health systems characteristics to public health performance. J Public Health Management & Practice. 2010;16(1):110-117.	√ Function linked to effectiveness √ Function linked to structure	Study of NACCHO's 2005 National Profile of Local Public Health Departments data set	Empirical System organization is related to performance at local level. Agency organization not investigated. Workforce competency, including leadership positions, is correlated with performance.
Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: A fundamental concept for public health practice. Ann Rev Public Health. 2009;30:175-201.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Review and commentary	Non-empirical Documents a link between evidence-based public health and effectiveness.

Citation	Inclusion criteria	Type	Relevant conclusions
Centers for Disease Control and Prevention. Promising practices in chronic disease prevention and control: A public health framework for action. Atlanta, GA: Department of Health and Human Services, 2003.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Literature review and expert recommendation	Non-empirical Recommends a framework for state and local health department capacity to address chronic disease prevention and health promotion.
Dilley JA, Bekemeier B, Harris JR. Quality improvement interventions in public health systems – A systematic review. Am J Prev Med 2012;43(5S1):S58-S71.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Literature review	Non-empirical More research is needed regarding the link between performance improvement activities and health outcomes in diverse public health settings.
Dodson EA, Baker EA, Brownson RC. Use of evidence-based interventions in state health departments: a qualitative assessment of barriers and solutions. J Public Health Management & Practice. 2010;16(6):E9-E15.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Study	Empirical Identified barriers to evidence-based decision making including time, resources, funding, and data. Political, structural, and management barriers also identified.
Dovey K. Addressing structural inhibitors of change in public health sector organizations: A South African case. J of Change Management. 2008;8(1):37-56.	√ Function linked to effectiveness √ Function linked to structure	Study	Empirical Extra management layer identified as a barrier related to efficient administration. Enterprise logic – ability to transform - identified as a lever of effectiveness. Confusion about where decision authority is results in poor outcomes.

Citation	Inclusion criteria	Type	Relevant conclusions
Erwin PC, Greene SB, Mays GP, et al. The association of changes in local health department resources with changes in state-level health outcomes. Am J Public Health. 2011;101(4):609-615.	√ Function linked to effectiveness √ Function linked to structure √ Chronic disease prevention and control	Study	Empirical Uses changes in state level health outcomes as measure of local health department effectiveness Increase in full time equivalents correlated with a decrease in cardio-vascular disease deaths.
Fallon MM, Jarris PE, Pestronk RM, et al. Achieving a culture of quality improvement: The vision for public health in 2026. J Public Health Management & Practice. 2010;16(1):3-4.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Editorial	Non-empirical Asserts that current structure, policy, and resources are not adequate to support effective public health. Organizational structure and infrastructure stability are important to overall effectiveness
Fielding JE, Briss PA. Promoting evidence-based public health policy: Can we have better evidence and more action? Health Affairs. 2006;25(4):969-978.	√ Function linked to effectiveness	Review	Non-empirical Calls for more evidence-based public health practice.
Gist ME, Locke EA, Taylor MS. Organizational behavior: Group structure, process, and effectiveness. J of Management. 1987;23(2):237-257.	√ Function linked to effectiveness √ Function linked to structure	Study	Empirical Sufficient resources, structure, and clear goals contribute to competent work.

Citation	Inclusion criteria	Type	Relevant conclusions
Greenhalgh. Maintaining organizational effectiveness during organizational retrenchment. J Applied Behavioral Science. 1982;18(2):155-170.	√ Function linked to effectiveness √ Function linked to structure	Study	Empirical Looks at effectiveness in the context of organizational change Personnel change and turnover can reduce organizational effectiveness
Gunzenhauser JD, Eggena ZP, Fielding JE, et al. The quality improvement experience in a high-performing local health department: Los Angeles County. J Public Health Management & Practice. 2010;16(1):39-48.	√ Function linked to effectiveness	Study	Empirical Quality Improvement identified as a strategy to improve effectiveness Data-based decision making identified as necessary to effective public health practice
Hajat A, Cilenti D, Harrison LM, et al. What predicts local public health agency performance improvement? A pilot study in North Carolina. J Public Health Management & Practice. 2009;15(2):E22-E33.	√ Function linked to effectiveness √ Function linked to structure	Study	Empirical Staffing level, particularly having more non-health staff such as IT, is linked with performance improvement. Staff experience was correlated with performance improvement.
Handler A, Issel M, Turnock B. A conceptual framework to measure performance of the public health system. American Journal of Public Health. 2001;91(8):1235-1239.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Model developed, not tested	Non-empirical Looks at system performance more than organizational performance. Structural capacity linked to effective public health practice in this model. Model based on Donabedian.

Citation	Inclusion criteria	Type	Relevant conclusions
Hanusaik N, O'Loughlin JL, Kishchuk N, et al. Organizational capacity for chronic disease prevention: A survey of Canadian public health organizations. European Journal of Public Health. 2009;20(2)195-201.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Descriptive study using survey data	Non-empirical Inadequate stability believed to negatively impact capacity. Workforce competency important to effectiveness.
Jacobs JA, Dodson EA, Baker EA et al. Barriers to evidence-based decision making in public health: A national survey of chronic disease practitioners. Public Health Reports. 2010;125:736-742.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Study	Non-empirical Assumes evidence-based public health results in effective public health practice Organizational barriers to evidence-based decision-making included: lack of incentives/rewards, inadequate funding, a perception of state legislators not supporting evidence-based interventions and policies, and feeling the need to be an expert on many issues.
Kimberly JK, Rottman DB. Environment, organization and effectiveness: A biographical approach. J of Management Studies. 1987;24(6):595-597.	√ Function linked to effectiveness √ Function linked to structure	Biographical study	Empirical Structure directly affects effectiveness. Professionalism and evidence-based decision-making impact effectiveness.
Leischow SJ, Milestein B. Systems thinking and modeling for public health practice. Am J Public Health. 2006;96(3):403-405.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Editorial	Non-empirical Structure is one kind of relationship that is important to effectiveness.

Citation	Inclusion criteria	Type	Relevant conclusions
Mason M, Schmidt R, Gizzi C, Ramsey S. Taking improvement action based on performance results: Washington State's experience. J Public Health Management Practice. 2010;16(1):24-31.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Study	Non-empirical Links Quality Improvement to effectiveness Created organizational structure to support ongoing Quality Improvement/performance improvement work at state level.
Mays GP, McHugh MC, Shim K, et al. Institutional and economic determinants of public health system performance. Am J Public Health. 2006;96(3):523-531.	√ Function linked to effectiveness √ Function linked to structure √ Chronic disease prevention and control	Study	Empirical Used essential services as effectiveness outcomes in local health departments.
National Association of Chronic Disease Directors. Workshop on Chronic Disease Program Integration. March 29-30, 2006. Atlanta, Georgia. Workshop Summary Report.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Consensus	Non-empirical Based on assumption that chronic disease program integration can improve effectiveness. States requested support for effectiveness work in the form or workforce competency, evidence-based practice recommendations, and infrastructure.
Riley WJ, Parsons HM, Duffy GL, et al. Realizing transformational change through quality improvement in public health. J Public Health Management Practice. 2010;16(1):72-78.	√ Function linked to effectiveness √ State health departments √ Chronic disease prevention and control	Review	Non-empirical Predicated on the idea that change is necessary for effectiveness and Quality Improvement is the best way to get that change Ability to change is related to developmental culture and responsiveness Ability to apply evidence-based decision making to public health practice

Citation	Inclusion criteria	Type	Relevant conclusions
Salinsky E, Garsky EA. The case for transforming governmental public health. Health Affairs. 2006;25(4):1017-1028.	√ Function linked to effectiveness √ Function linked to structure √ State health departments	Review	Non-empirical References organizational disconnects and lack of ability to attract highly trained professionals as sources of ineffectiveness. Surge capacity is important to infrastructure stability and responsiveness to emerging issues
Scutchfield FD, Marks JS, Perez DJ, Mays GP. Public health services and systems research. Am J Prev Med. 2007;33(2):169-171.	√ Function linked to effectiveness √ Function linked to structure √ State health departments	Commentary	Non-empirical Organizational structure needs studying Infrastructure stability is required for effectiveness Evidence-based decision-making is required for effectiveness
Slonim AB, Callaghan C, Daily L, et al. Recommendations for integration of chronic disease programs: Are your programs linked? Preventing Chronic Disease. 2007;4(2):01_0163	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Commentary	Non-empirical Collaborative planning and programming will enable state chronic disease programs to be more effective and efficient.
Sowa JE, Coleman Selden S, Sandfort JR. No longer unmeasurable? A multidimensional integrated model of nonprofit effectiveness. Nonprofit and Voluntary Sector Quarterly. 2004;33(4):711-728.	√ Function linked to effectiveness √ Function linked to structure	Commentary	Non-empirical Structure should be part of effectiveness at both the management and program levels.

Citation	Inclusion criteria	Type	Relevant conclusions
Stazyck EC, Goerdel HT. The benefits of bureaucracy: Public managers' perceptions of political support, goal ambiguity, and organizational effectiveness. J Public Administration Research and Theory. 2010;21:645-672.	√ Function linked to effectiveness √ Function linked to structure √ State health departments	Study	Empirical More emphasis on performance than procedure required for ability to respond to external environment. Managing uncertainty related to environmental sources is important.
Tata J, Prasad S. Team self-management, organizational structure, and judgments of team effectiveness. J of Managerial Issues. 2004;16(2):248-265.	√ Function linked to effectiveness √ State health departments	Study	Non-empirical Centralization and formalization of organizational structure may be inversely related to effectiveness Broader skills and knowledge may be related to effectiveness.
Tilson H, Berkowitz B. The public health enterprise: Examining our twenty-first-century policy changes. Health Affairs. 2006;25(4):900-910.	√ Function linked to effectiveness √ Function linked to structure √ State health departments √ Chronic disease prevention and control	Commentary	Non-empirical Structure/infrastructure at state level impacts effectiveness of entire system.

PHFAST – Public Health Framework ASsessment Tool
Adapted from the Public Health Framework for Action and STAR

State Health Departments are in a state of constant development and growth. As data is analyzed and legislators adjust and develop regulations, new items may become top priority for health departments yet maintaining functions to the population it serves remains critical. While change is constant and progress a daily goal, a slight pause in operation to determine efficiency as a whole can be extremely beneficial. At times, staff may be so engrossed in a project that barriers may be ignored until it is too late and valuable resources are wasted.

The National Association of Chronic Disease Directors (NACDD) has developed the Public Health Framework Assessment Tool (PHFAST) for state health departments in need of a quickly actionable process for assessing chronic disease capacity. The tool is adapted from the CDC's ***Promising Practices in Chronic Disease Prevention and Control: Public Health Framework for Action*** and the NACDD's State Technical Assistance and Review program (STAR). PHFAST is meant to be a midpoint between the document and the STAR program. Although both useful resources, the CDC's Framework for Action is a lengthy report with an abstract agenda while the STAR program selects a maximum of four states each fiscal year to participate. These limitations created a need for a tool for state health departments to assess current status of program effectiveness without the help of an outside organization or an organization-wide evaluation. In response, NACDD developed PHFAST to provide a useful method for state health departments to evaluate the effectiveness and efficiency of chronic disease prevention programs in a timeframe that is practical.

Core components of effective chronic disease prevention programs, outlined by the NACDD Framework for Comprehensive Chronic Disease Programs include Leadership, Epidemiology and Surveillance, Partnerships, State Plans, Interventions, Program Management and Administration, and Program Integration. PHFAST touches on key points, also called indicators, in each core component allowing for a more general assessment of current standing with an opportunity to more deeply analyze where necessary. PHFAST indicators are developed from some of the STAR program's 42 indicators. The result was a version of STAR, with a smaller time frame, identifying areas in need of improvement or adjustment.

Expected Results from the internal self-assessment include development of a clearer program vision and more effective planning, improved networking/collaboration – internally and externally, highlighting of program successes and accomplishments, identification of technical assistance needs, ready information for grant writing and information for designing more effective organizational structure.

PHFAST – *P*ublic *H*ealth *F*ramework *AS*sessment *T*ool

Adapted from the Public Health Framework for Action and STAR

Domain/Indicator		Status	Opportunity	Follow-up
LEADERSHIP: The state chronic disease prevention and control unit is the unifying voice for the prevention and control of chronic diseases.		0=Activity not present PW=Present/weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act? Who could take the lead?	What information is missing? What do you need to do or know before you can act?
LS1	The unit is a key contact for others both inside and outside the state health department who are interested in chronic disease prevention and control.			
LS2	The unit informs decision-makers and partners (including media, governor, legislature, other state agencies, community coalitions and consumer and advocacy groups) about the units's value and accomplishments.			
LS3	The unit has demonstrated the capacity to be a catalyst for change at multiple levels and in multiple sectors of the community.			
LS4	The unit has demonstrated the capacity to articulate the health needs of state residents.			
LS5	The unit has demonstrated the ability to argue convincingly that a comprehensive approach to chronic health problems will help meet those needs.			

PHFAST – Public Health Framework ASsessment Tool

Adapted from the Public Health Framework for Action and STAR

Domain/Indicator	Status	Opportunity	Follow-up
EPIDEMIOLOGY AND SURVEILLANCE: The state chronic disease prevention and control unit establishes the burden associated with chronic diseases and frames the problem to be addressed.	0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
ES1	The unit regularly develops and disseminates a chronic disease surveillance summary data report.			
ES2	The unit has assessed the completeness and validity of all core datasets, linking data sets when appropriate and useful to do so.			
ES3	The unit regularly monitors and reports disparities in chronic disease prevalence, risk, and outcomes.			
PARTNERSHIPS: The state chronic disease prevention and control unit establishes strong working relationships with other government agencies and with nongovernmental, lay and professional groups.	0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
PS1	The chronic disease prevention and control unit collaborates with other units within the state health department such as: MCH, EMS, environmental health, school health, substance abuse, injury, and occupational health.			

PHFAST – Public Health Framework ASsessment Tool

Adapted from the Public Health Framework for Action and STAR

Domain/Indicator		Status	Opportunity	Follow-up
PS2	The unit collaborates with other state agencies such as: Medicare, Medicaid, Office on Aging, Department of Education, and Department of Mental Health.			
PS3	The unit collaborates with non-governmental organizations such as: American Cancer Society, American Diabetes Association, American Heart Association, American Lung Association, Arthritis Foundation, health care associations, and universities.			
PS4	The unit collaborates with local health departments and communities including such groups as business and industry, consumer groups, youth-serving organizations, religious organizations, and PTA's.			
STATE PLANS: The state chronic disease prevention and control unit uses data and works with partners to develop comprehensive state plans to guide program efforts.		0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
SP1	The unit develops and implements a state plan to prevent and control chronic disease.			
SP2	The unit ensures that chronic disease prevention and control is included in all relevant state health plans.			

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Adapted from the Public Health Framework for Action and STAR

Domain/Indicator	Status	Opportunity	Follow-up
INTERVENTIONS: The state chronic disease prevention and control unit identifies specific targets for change (population segments, organizations, or environments), chooses the best channels through which to effect such changes, and selects appropriate strategies for doing so.	O=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
IN1 — The unit implements interventions that are evidence-based, with clear connection to published literature, national evidence-based guidelines, ongoing research and/or program evaluation.			
IN2 — The unit prioritizes interventions for populations with relatively high prevalence of disease or secondary risk factors, limited access to information or services, or a higher risk of developing disease.			
IN3 — The unit implements evidence-based interventions in organizations or systems capable of affecting the health of the priority population segments.			
IN4 — The unit implements evidence-based interventions designed to change the physical or policy environment in which people live, work, learn and play.			
IN5 — The unit implements interventions that use multiple channels for reaching targeted individuals and populations.			

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Adapted from the Public Health Framework for Action and STAR

Domain/Indicator		Status	Opportunity	Follow-up
IN6	The unit implements policy interventions that address multiple levels (state, regional, local) and multiple types of policy (voluntary, regulation, legislation, standards).			
IN7	The unit implements interventions that are sensitive to health inequities including but not limited to conditions in which people are born, grow, live, work and age influenced by varying distribution of money, power, resources and access to medical care facilities.			
EVALUATION: The state chronic disease prevention and control unit establishes systematic approaches for determining whether its comprehensive chronic disease control program is being implemented successfully and whether its objectives are being achieved.		0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
EV1	The unit monitors progress in achieving the objectives of the chronic disease prevention and control plan or agenda.			
EV2	The unit uses multiple methods in evaluating unit performance and progress towards outcomes.			
EV3	The unit uses evaluation findings to make programmatic adjustments and modifications.			

PHFAST – Public Health Framework ASsessment Tool

Adapted from the Public Health Framework for Action and STAR

Domain/Indicator	Status	Opportunity	Follow-up
EV4 The unit disseminates evaluation findings to stakeholders including staff members responsible for intervention development, professionals and academics at the national level, and agency leadership.			
PROGRAM MANAGEMENT AND ADMINISTRATION: The state chronic disease prevention and control unit provides the consistent administrative, financial, and staff support necessary to maintain successful programs.	0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
PM1 The unit has uses a variety of modern, distance-learning technologies to support life-long learning appropriate to programmatic needs and improve staff's professional effectiveness.			
PM2 The unit has appropriate technology tools to describe the magnitude of chronic disease problems; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene, prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works.			
PM3 The unit's structure allows related programs to interface and interact easily.			

PHFAST – Public Health Framework ASsessment Tool

Adapted from the Public Health Framework for Action and STAR

Domain/Indicator	Status	Opportunity	Follow-up
PM4 The unit's staff members have received basic training in chronic disease prevention and control.			
PM5 Key staff members have advanced training in evaluation, strategic planning, the use of surveillance data, and grant writing.			
PROGRAM COORDINATION: The state chronic disease unit has strategically aligned chronic disease categorical program resources to increase the effectiveness and efficiency of each program in a partnership without compromising the integrity of categorical program objectives.	0=Activity not present PW=Present but weak PA=Present/adequate PS=Present/strong	What can you build on? Where might you act?	What information is missing? What do you need to do or know before you can act?
PC1 The unit supports and strengthens cross-programming relationships that focus on mutual benefits and coordinated approaches to planning, implementation, and evaluation of integration efforts.			
PC2 The unit assures communication networks and tools are in place for sharing of information among staff, partners, and community collaborators.			
PC4 The unit has established communication mechanisms to identify and share common linkages, gaps, workload and resources.			
PC5 The unit regularly reviews integrated and collaborative activities for efficiency and effectiveness.			

APPENDIX 3: WORKFORCE COMPETENCY TOOL

Competency Assessment Tool for Teams

Purpose and Use

The National Association of Chronic Disease Directors (NACDD) Competency Assessment Tool for Teams enables chronic disease program staff to assess the proficiency of current and prospective team members across the range of skills and knowledge specific to your program or project team.

The Competencies Assessment Tool can be used to:
- Identify the competency domains relevant to the team and its work.
- Assess the strengths and areas for improvement of team members.
- Identify where growth of current members or recruitment of new members is needed to facilitate outcome achievement.
- Identify learning opportunities for team members.

Content

The Competency Assessment Tool for Teams was developed by NACDD, based on a full set of competencies that describe the ideal chronic disease practitioner. To view the complete set of competencies and background information about the competencies project, please visit the NACDD website at http://www.chronicdisease.org/. This tool enables you to assess the level of proficiency of team members on the most important specific skills and knowledge in some or all of the seven competency domains:
- Build support
- Develop and evaluate programs
- Influence policy and systems change
- Lead strategically
- Manage people
- Manage programs and resources
- Use public health science

Directions for use:

1. In the attached Ratings Tables, choose the competency domains which are relevant to the work of your team.

2. For each chosen domain, rate the proficiency of team members on the specific items contained in the table below the domain description, using the rating criteria at the top of each page of the table.

3. List the name or names of the rated team members in the appropriate column on the rating table.

4. Calculate the average team rating and place in the appropriate column on the rating table.

5. Use the self-scoring table to determine the proficiency level in each of the chosen competency domains based on the team average.

6. Reflect on the results in the context of your team to identify areas where improvement is needed among current team members, or areas in which the team could benefit from recruiting additional team members to fill specific expertise needs.

7. Utilize the comments section on the self-scoring table to document any special information relevant to that section. For example, if one or two team members are highly proficient in a specific competency domain, they may be a resource for other members of the team without the need for additional improvement activities, regardless of the team average achieved.

Domain Ratings Tables

Rating Criteria: 1=not at all proficient; 2=somewhat proficient; 3=proficient; 4=highly proficient; 5=outstanding proficiency/expertise

Build Support: Chronic disease practitioners establish strong working relationships with stakeholders, including other programs, government agencies and nongovernmental lay and professional groups to build support for chronic disease prevention and control.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
3	Establish and maintain linkages and/or partnerships with key stakeholders (including traditional, nontraditional, and academic partners).							
4	Use effective collaborative strategies to build meaningful partnerships.							
11	Facilitate integration between chronic disease programs and other state health-related programs (e.g., surveillance, oral health, maternal and child health, Medicaid, state employee health insurance, emergency preparedness).							
23	Lead and participate in groups to address emerging chronic disease issues.							
25	Advocate for chronic disease programs and resources.							
33	Listen to others in an unbiased manner, respect points of view of others, and promote the expression of diverse opinions and perspectives.							
35	Communicate effectively (orally and in writing) for professional and lay audiences.							

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Rating Criteria: 1=not at all proficient; 2=somewhat proficient; 3=proficient; 4=highly proficient; 5=outstanding proficiency/expertise

Design and Evaluate Programs: Chronic disease practitioners develop and implement evidence-based interventions and conduct evaluation to ensure on-going feedback and program effectiveness.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
1	Apply principles of cultural appropriateness to program design.								
9	Select appropriate program and intervention activities.								
17	Use program evaluation findings to improve program performance.								
27	Identify and use public health data as a tool to develop and prioritize community-based interventions or policies for chronic disease.								

Influence Policies and Systems Change: Chronic disease practitioners implement strategies to change the health-related policies of private organizations or governmental entities capable of affecting the health of targeted populations.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
5	Assess the impact of public policies, laws, and regulations on chronic disease prevention and control.								
16	Use policy as a tool in advancing chronic disease and control.								
28	Explain systems thinking and principles of systems change.								

Rating Criteria: 1=not at all proficient; 2=somewhat proficient; 3=proficient; 4=highly proficient; 5=outstanding proficiency/expertise

Lead Strategically: Chronic disease practitioners articulate health needs and strategic vision, serve as a catalyst for change and demonstrate program accomplishments to ensure continued funding and support within their scope of practice.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
7	Facilitate integration among chronic disease programs.							
12	Leverage resources.							
13	Provide leadership to create key values and shared vision.							
14	Respond with flexibility to changing needs.							
31	Demonstrate critical thinking.							

Manage People: Chronic disease practitioners oversee and support the optimal performance and growth of program staff as well as themselves

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
2	Practice effective time management.							
18	Recruit and retain a diverse chronic disease workforce.							
20	Manage a team of professional staff effectively.							
26	Recruit, mentor, and support a diverse interdisciplinary team.							

NACDD Competency Team Assessment Tool

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Rating Criteria: 1=not at all proficient; 2=somewhat proficient; 3=proficient; 4=highly proficient; 5=outstanding proficiency/expertise

Manage Programs and Resources: Chronic disease practitioners ensure the consistent administrative, financial, and staff support necessary to sustain successful implementation of planned activities and build opportunities.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
8	Identify and assess potential funding opportunities.								
10	Navigate cooperative agreements with the CDC.								
22	Balance needs, requirements, partnerships, work load, etc. for multiple projects/programs.								
24	Set program goals and objectives of chronic disease programs.								
32	Manage chronic disease programs within budget constraints.								
34	Monitor chronic disease program performance.								

Use Public Health Science: Chronic disease practitioners gather, analyze, interpret and disseminate data and research findings to define needs, identify priorities, and measure change.

Item #	Item	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating	Name: Rating
6	Recognize and apply current relevant scientific evidence.								
15	Develop and adapt approaches to problems that take into account differences among populations.								
19	Describe socioeconomic and behavioral determinants of health disparities.								
21	Articulate key chronic disease issues.								
29	Discuss the underlying causes and management of chronic diseases, including behavioral, medical, genetic, environmental and social factors.								
30	Articulate evidence-based approaches to chronic disease prevention and control.								

NACDD Competency Team Assessment Tool

Self-Scoring Table Directions: Use the scoring table below to tally the average scores for each of the selected competency domains. Add up the average ratings for each of the competency items within that domain. Circle the overall proficiency level for each domain, based on the total score for that domain. In the comments section, you may wish to identify particular examples of accomplishments, breadth or depth of experience, contextual factors that affect an individual team member's ability to do this work. These comments may help you to identify areas where improvement is needed among current team members, or areas where you could benefit from recruiting additional team members to fill specific expertise needs.

Competency Domain	Fill in the team average rating for each competency item number. Add the ratings to create the total average score for each domain.	Circle the overall proficiency level for this domain, based on the total average score in the box to the left.	Comments
Build support	Item 3 ___ 4 ___ 11 ___ 23 ___ 25 ___ 33 ___ 35 ___ Total: ___	Total Scores: 31-35 = Outstanding proficiency 24-30 = Highly proficient 17-23 = Proficient 10-16 = Somewhat Proficient 7-9 = Low Proficiency	
Design and evaluate programs	Item 1 ___ 9 ___ 17 ___ 27 ___ Total: ___	Total Scores: 18-20 = Outstanding proficiency 14-17 = Highly proficient 10-13 = Proficient 6-9 = Somewhat Proficient 4-5 = Low Proficiency	
Influence policy and systems change	Item 5 ___ 16 ___ 28 ___ Total: ___	Total Scores: 14-15 = Outstanding proficiency 10-13 = Highly proficient 7-9 = Proficient 4-6 = Somewhat Proficient 3 = Low Proficiency	

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		Total Scores:
Lead strategically	Item 7 _____ 12 _____ 13 _____ 14 _____ 31 _____ Total: _____	22-25 = Outstanding proficiency 17-21 = Highly proficient 12-16 = Proficient 7-11 = Somewhat Proficient 5-6 = Low Proficiency
Manage people	Item 2 _____ 18 _____ 20 _____ 26 _____ Total: _____	Total Scores: 18-20 = Outstanding proficiency 14-17 = Highly proficient 10-13 = Proficient 6-9 = Somewhat Proficient 4-5 = Low Proficiency
Manage programs and resources	Item 8 _____ 10 _____ 22 _____ 24 _____ 32 _____ 34 _____ Total: _____	Total Scores: 27-30 = Outstanding proficiency 21-26 = Highly proficient 15-20 = Proficient 9-14 = Somewhat Proficient 6-8 = Low Proficiency
Use public health science	Item 6 _____ 15 _____ 19 _____ 21 _____ 29 _____ 30 _____ Total: _____	Total Scores: 27-30 = Outstanding proficiency 21-26 = Highly proficient 15-20 = Proficient 9-14 = Somewhat Proficient 6-8 = Low Proficiency

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Team Development Plan:

Based on the previous proficiency scores and comments, create a plan for team development. In the Strengths section, list those domains where the proficiency rating is appropriate for achievement of the team goals/outcomes. In the Areas to Develop section, list those domains where the proficiency rating is not appropriate for goal achievement.

Strengths:

_____

_____

Areas to Develop:

_____

_____

Prioritize areas for team member development by considering which skills are needed most urgently, and the level of importance of each domain to task accomplishment. Which tasks must the team accomplish first? What skills must be built on previously developed skills or knowledge? Considering the answers to these questions, use the table below to identify which areas to develop first, and the specific actions and target dates needed. Bear in mind that these actions may be plans for professional development for current team members or may outline the need for recruitment of new team members with specific skill sets or knowledge.

Areas to Develop:	Action:	Target Date:

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APPENDIX 4: INTERVIEW GUIDE

Interview guide: Master question list

Thank you for agreeing to participate in this case study. You can leave this interview at any time and choose not to answer any question. As you know, I am a doctoral student at the University of North Carolina – Chapel Hill and I am interested in learning more about how the structure of health departments helps or hinders its functioning. I'm here specifically to learn more about how Montana's chronic disease prevention and health promotion unit is structured and how it works. What we learn in this case study will be used by Montana in your coordinated chronic disease program development and it will also be used to inform future research on the relationship between structure and performance in state health departments. I will be taking notes during our conversation. I may need to follow up with you afterward to clarify what I've recorded. I will share my draft notes of our conversation with you to make sure that I have accurately captured your input.

Your name will not be reported in the results. However, I cannot guarantee the confidentiality of your responses. Due to the size of the Bureau of Chronic Disease Prevention and Health Promotion and given your familiarity with your colleagues, it may be possible for someone to match specific comments with a particular participant.

Are you willing to participate?

Key: A=All, CDD=Chronic Disease Director, CDM=Chronic Disease Program Manager, CDS=Chronic Disease Program Staff, SHO=State Health Official, X=External Partner

Demographic questions:
• Confirm name, email, and phone number. (A)
• What is your job title? (A)
• To whom do you report? (CDD, CDM, CDS)
• Does anyone report to you? (CDM, CDS) *(Show org chart here)*
• How long have you been in your current job? (CDD, CDM, CDS, SHO)
• What is your educational background? (CDD, CDM, CDS, SHO)
• How long have you been aware of the Bureau of Chronic Disease Prevention and Health Promotion's work? How long have you worked with the Bureau of Chronic Disease Prevention and Health Promotion? (X)

I would like to get your thoughts on several elements the literature suggests may be related to organizational effectiveness for public health. This conceptual model describes how these elements may be related to structure and function. *(show model here)*

Collaboration: working internally and externally for the purpose of leveraging resources to maximize effectiveness and efficiency.

- To what extent do you collaborate with programs within the Bureau of Chronic Disease Prevention and Health Promotion? (A) *(not at all, infrequently, frequently, always)*
- To what extent do you collaborate with other units within the Public Health and Safety Division? (A) *(not at all, infrequently, frequently, always)*
- To what extent do you collaborate with other organizations? (CDD, CDM, CDS) *(not at all, infrequently, frequently, always)*
- How good is the Bureau of Chronic Disease Prevention and Health Promotion at collaboration? (A) *(weak, somewhat weak, somewhat strong, very strong)*
- How good is your program at collaboration? (CDM, CDS) *(weak, somewhat weak, somewhat strong, very strong)*

Evidence-based decision-making: the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of populations.
- What criteria are used for making programmatic and strategic decisions in the Bureau of Chronic Disease Prevention and Health Promotion? (A)
- What kind of information do you use to help in decision-making? What are the sources of this information? (CDD, CDM, CDS)
- How would you characterize your confidence in the robustness of decision-making in the Bureau of Chronic Disease Prevention and Health Promotion in general? (A) *(Not confident, somewhat unconfident, somewhat confident, very confident)*

Goal ambiguity: the extent to which organizational goals are vague, unclear, unknown, or hard to measure.
- How would you characterize the clarity of the state Public Health and Safety Division's goals? (A) *(Not clear, somewhat unclear, somewhat clear, very clear)*
- How would you characterize the clarity of the goals of the chronic disease unit? (A)
- How would you characterize the clarity of your program's goals? (A)

Political support: the extent to which key opinion leaders and decision makers, and advocate for organizational goals and practices and possibly needed resources.
- How would you characterize political support for the Bureau of Chronic Disease Prevention and Health Promotion's work among decision makers who are outside the Public Health and Safety Division? (A) *(Very weak, somewhat weak, somewhat strong, very strong)*
- How would you characterize political support for your work inside the Public Health and Safety Division? (CDD, CDM, CDS, SHO)

Responsiveness: the ability of the organization to react dynamically to changes in the political environment and address emerging public health needs.
- How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to address emerging needs? (A) *(Very weak, somewhat weak, somewhat strong, very strong)*
- How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to continue core work if resources are interrupted? (A)

- How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to respond strategically to new opportunities? (A)
- Has the Bureau of Chronic Disease Prevention and Health Promotion's ability to respond changed over the last 5 years? If so, how? (A)

Workforce competency: the level of skill, professionalism, and knowledge present in among staff. Thinking about the skills and knowledge that are needed to do the work of the Bureau of Chronic Disease Prevention and Health Promotion,
- How confident are you that the Bureau staff has the skill and knowledge they need to be able to accomplish the work of the bureau? *(How would you characterize the overall skill and knowledge level of the chronic disease staff?)* (A) **(Not at all confident, somewhat unconfident, somewhat confident, very confident)** Probe for gaps.
- How confident are you that you have the skills and knowledge you need to be able to accomplish your job responsibilities? *(How would you characterize your skill and knowledge level related to your work responsibilities?)* (CDD, CDM, CDS) **(Not at all confident, somewhat unconfident, somewhat confident, very confident)** Prob for gaps.
- What is the availability of ongoing training for Bureau of Chronic Disease Prevention and Health Promotion staff? (CDD, CDM, CDS, SHO)
- Do you have access to the training and professional development opportunities you believe would improve your ability to successfully do your job? (CDD, CDM, CDS)

Performance - the extent to which the organization is meeting its goals.
- How would you character your program's effectiveness? (CDM, CDS) *(very ineffective, somewhat ineffective, somewhat effective, very effective)*
- How would you characterize the effectiveness of the Bureau of Chronic Disease Prevention and Health Promotion? (A)
- How would you characterize the effectiveness of the state Public Health and Safety Division in general? (A)
- In your opinion, what structural elements of the Bureau of Chronic Disease Prevention and Health Promotion or state Public Health and Safety Division facilitate public health effectiveness? (A)
- In your opinion, what structural elements of the Bureau of Chronic Disease Prevention and Health Promotion or state Public Health and Safety Division inhibit effectiveness? (A)
- Are there any changes you would recommend to improve effectiveness? (A)
- Do you have any recommendations for an ideal Bureau of Chronic Disease Prevention and Health Promotion structure? (A)

Master Collection form 1

A: Demographics

A1	Confirm name, email, and phone number.	
	Name:	
	Phone:	
	Email:	
A2	What is your job title?	
A3	To whom do you report?	
A4	Does anyone report to you?	
A5	How long have you been in your current job?	
A6	What is your educational background?	
A7	How long have you been aware of the Bureau of Chronic Disease Prevention and Health Promotion's work? How long have you worked with the Bureau of Chronic Disease Prevention and Health Promotion?	

B: Collaboration -- working internally and externally for the purpose of leveraging resources to maximize effectiveness and efficiency.

B1	To what extent do you collaborate with programs within the Bureau of Chronic Disease Prevention and Health Promotion?	
	Not at all	*Infrequently*	*Frequently*	*Always*
B2	To what extent do you collaborate with other units within the Public Health and Safety Division?	
	Not at all	*Infrequently*	*Frequently*	*Always*
B3	To what extent do you collaborate with other organizations?	
	Not at all	*Infrequently*	*Frequently*	*Always*
B4	How good is the Bureau of Chronic Disease Prevention and Health Promotion at collaboration?	
	Weak	*Somewhat weak*	*Somewhat strong*	*Very Strong*
B5	How good is your program at collaboration?	
	Weak	*Somewhat weak*	*Somewhat strong*	*Very Strong*
B6	Who are your most important external partners?	

C: Evidence-based decision-making -- the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of populations.

C1	What criteria are used for making programmatic and strategic decisions in the Bureau of Chronic Disease Prevention and Health Promotion?	
C2	What kind of information do you use to help in decision-making? What are the sources of this information?	

C3	How would you characterize your confidence in the robustness of decision-making in the Bureau of Chronic Disease Prevention and Health Promotion in general?			
	Not confident	*Somewhat unconfident*	*Somewhat confident*	*Very confident*

D: Goal Ambiguity -- the extent to which organizational goals are vague, unclear, unknown, or hard to measure.

D1	How would you characterize the clarity of the state Public Health and Safety Division's goals?			
	Not clear	*Somewhat unclear*	*Somewhat clear*	*Very clear*

D2	How would you characterize the clarity of the goals of the Bureau of Chronic Disease Prevention and Health Promotion?			
	Not clear	*Somewhat unclear*	*Somewhat clear*	*Very clear*

D3	How would you characterize the clarity of your program's goals?			
	Not clear	*Somewhat unclear*	*Somewhat clear*	*Very clear*

E. Political support -- the extent to which key opinion leaders and decision makers, and advocate for organizational goals and practices and possibly needed resources.

E1	How would you characterize political support for the Bureau of Chronic Disease Prevention and Health Promotion's work among decision makers who are outside the Public Health and Safety Division?			
	Very weak	*Somewhat weak*	*Somewhat strong*	*Very strong*

E2	How would you characterize political support for your work inside the Public Health and Safety Division?			
	Very weak	*Somewhat weak*	*Somewhat strong*	*Very strong*

F: Responsiveness -- the ability of the organization to react dynamically to changes in the political environment and address emerging public health needs.

F1	How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to address emerging needs?			
	Very weak	*Somewhat weak*	*Somewhat strong*	*Very strong*

F2	How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to continue core work if resources are interrupted?			
	Very weak	*Somewhat weak*	*Somewhat strong*	*Very strong*

F3	How would you characterize the Bureau of Chronic Disease Prevention and Health Promotion's ability to respond strategically to new opportunities?			
	Very weak	*Somewhat weak*	*Somewhat strong*	*Very strong*

F4	Has the Bureau of Chronic Disease Prevention and Health Promotion's ability to respond changed over the last 5 years? If so, how?

G. Workforce competency -- the level of skill, professionalism, and knowledge present in among staff. Thinking about the skills and knowledge that are needed to do the work of the Bureau of Chronic Disease Prevention and Health Promotion...

G1	How confident are you that the Bureau staff has the skill and knowledge they need to be able to accomplish the work of the bureau? *(How would you characterize the*

overall skill and knowledge level of the chronic disease staff?)

Not at all confident	*Somewhat unconfident*	*Somewhat confident*	*Very confident*

G2 How confident are you that you have the skills and knowledge you need to be able to accomplish your job responsibilities? *(How would you characterize your skill and knowledge level related to your work responsibilities?)*

Not at all confident	*Somewhat unconfident*	*Somewhat confident*	*Very confident*

G3 What is the availability of ongoing training for Bureau of Chronic Disease Prevention and Health Promotion staff?

G4 Do you have access to the training and professional development opportunities you believe would improve your ability to successfully do your job?

H. Performance -- the extent to which the organization is meeting its goals.

H1 How would you character your program's effectiveness?

Very ineffective	*Somewhat ineffective*	*Somewhat effective*	*Very effective*

H2 How would you characterize the effectiveness of the Bureau of Chronic Disease Prevention and Health Promotion?

Very ineffective	*Somewhat ineffective*	*Somewhat effective*	*Very effective*

H3 How would you characterize the effectiveness of the state Public Health and Safety Division in general?

Very ineffective	*Somewhat ineffective*	*Somewhat effective*	*Very effective*

H4 In your opinion, what structural elements of the Bureau of Chronic Disease Prevention and Health Promotion or state Public Health and Safety Division facilitate public health effectiveness?

H5 In your opinion, what structural elements of the Bureau of Chronic Disease Prevention and Health Promotion or state Public Health and Safety Division inhibit effectiveness?

H6 Are there any changes you would recommend to improve effectiveness?

H7 Do you have any recommendations for an ideal Bureau of Chronic Disease Prevention and Health Promotion structure?

Descriptor Name	Memo	Type	ListData
ID		Text	
Interview	Data source=interview	Number	
Document	Data source=document	Number	
Classification	Job Class	List	Chronic Disease Program Manager, Chronic Disease Program Staff – Administrative, Chronic Disease Program Staff – Content, Chronic Disease Section Manager, External Partner Representative, State Health Officer & Staff
A5-Bureau	Years in Bureau	Number	
A5-Current	Years in current position	Number	
A6	Educational background	List	Not public health, MPH, Other public health
A7	Years working with Bureau	Number	
B1		List	Not at all, Infrequently, Frequently, Always, Refused
B2		List	Not at all, Infrequently, Frequently, Always, Refused
B3		List	Not at all, Infrequently, Frequently, Always, Refused
B4		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
B5		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
C3		List	Not confident, Somewhat unconfident, Somewhat confident, Very confident, Refused
D1		List	Not clear, Somewhat unclear, Somewhat clear, Very clear, Refused
D2		List	Not clear, Somewhat unclear, Somewhat clear, Very clear, Refused
D3		List	Not clear, Somewhat unclear, Somewhat clear, Very clear, Refused
E1		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
E2		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
F1		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
F2		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
F3		List	Weak, Somewhat weak, Somewhat strong, Very strong, Refused
G1		List	Not confident, Somewhat unconfident, Somewhat confident, Very confident, Refused
G2		List	Not confident, Somewhat unconfident, Somewhat confident, Very confident, Refused
H1		List	Very ineffective, Somewhat ineffective, Somewhat effective, Very effective, Refused
H2		List	Very ineffective, Somewhat ineffective, Somewhat effective, Very effective, Refused
H3		List	Very ineffective, Somewhat ineffective, Somewhat effective, Very effective, Refused

APPENDIX 7: MONTANA BUREAU OF CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION ORGANIZATIONAL CHART

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Public Health & Safety Division
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BUREAU CHIEF

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Fiscal Officer

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Giny Furshong

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PROGRAM COORD
Meg Traci

EMS & TRAUMA SYSTEMS

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EMS Systems Mgr

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EMS Service Performance Improvement Coordinator

Vacant
EMS-C Coordinator

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Bobbi Perkins
Injury Prevn. Coord

Jessa Fernandes
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TRAUMA SYSTEM

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Trauma Systems Mgr

Gail Hatch
Data Technician

Carol Kussman
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Michelle Harrell
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DIABETES

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Dorota Carpenedo
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Diane Arave
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Linda Krantz
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Michelle McNiven
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Jeremy Brokaw
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COMPREHENSIVE CANCER CONTROL

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Mary Buck
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Jim Van Brunt
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Paige Johnson
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Diana Dean
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BIBLIOGRAPHY

1.   Anderson LM, Brownson RC, Fullilove MT, et al. Evidence-based public health policy and practice: Promises and limits. Am J Prev Med. 2005;28(5S):226-230.

2.   Association of State and Territorial Health Officials. Chartbook of state public health: Volume one. 2010.

3.   Association of State and Territorial Health Officials. Profile of state public health: Volume one. 2009.

4.   Association of State and Territorial Health Officials. Profile of state public health: Volume two. September 2011.

5.   Association of State and Territorial Health Officials. Understanding state public health: A project of the Association of State and Territorial Health Officials. Whitepaper. 2007.

6.   Baldrige Performance Excellence Program. National Institutes of Standards and Technology. Department of Commerce. 2011-2012. www.nist.gov/baldrige

7.   Ballew P, Brownson RC, Haire-Joshu D, et al. Dissemination of effective physical activity interventions: Are we applying the evidence? Health Education Research. Oxford University Press. 2010.

8.   Barnett DJ, Balicer RD, Blodgett D, et al. The application of the Haddon Matrix to public health readiness and response planning. Environmental Health Perspectives. 2005;113(5):561-566.

9.   Beitsch LM, Brooks RG, Grigg M, Menachemi N. Structure and functions of state public health agencies. AJPH. 2006;96(1):167-172.

10.   Beitsch LM, Brooks RG, Menachemi N, Libbey PM. Public health at center stage: New roles, old props. Health Affairs. 2006;25(4):911-922.

11.   Beitsch LM, Corso LC. Accountability: The fast lane on the highway to change. Am J Public Health. 2009;99(9):1545.

12.   Bender K, Halverson PK. Quality improvement and accreditation: What might it look like? J Public Health Management & Practice. 2010;16(1):79-82.

13. Bhandari MW, Scutchfield FD, Charnigo R, et al. New data, same story? Revisiting studies on the relationship of local public health systems characteristics to public health performance. J Public Health Management & Practice. 2010;16(1):110-117.

14. Bialek R, Carden J, Duffy GL. Supporting public health departments' quality improvement initiatives: Lessons learned from the Public Health Foundation. J Public Health Management & Practice. 2010;16(1):14-18.

15. Boyatzis, R. Transforming qualitative information. 1998. Sage Publications.

16. Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: A fundamental concept for public health practice. Ann Rev Public Health. 2009;30:175-201.

17. Cameron K, Mora C, Leutscher T, Calarco M. Effects of positive practice on organizational effectiveness. J Applied Behavioral Science. 2011;47(3):266-308.

18. Centers for Disease Control and Prevention. Promising practices in chronic disease prevention and control: A public health framework for action. Atlanta, GA: Department of Health and Human Services, 2003.

19. Corso, LC, Lenaway D, Beitsch LM, et al. The National Public Health Performance Standards: Driving quality improvement in public health systems. J Public Health Management & Practice. 2010;16(1):19-23.

20. Creswell JW. Qualitative Inquiry & Research Design – Choosing Among Five Approaches. 2nd Edition. 2007. Sage Publications.

21. Creswell JW. Research Design – Qualitative, Quantitative, and Mixed Methods Approaches. 2nd Edition. 2003. Sage Publications.

22. Davis MV. Opportunities to advance quality improvement in public health. J Public Health Management & Practice. 2010;16(1):8-10.

23. de Rijk A, van Raak A, van der Made J. A new theoretical model for cooperation in public health settings: the RDIC model. Qualitative Health Research. 2007;17:1103-1116.

24. Dilley JA, Bekemeier B, Harris JR. Quality improvement interventions in public health systems – A systematic review. Am J Prev Med. 2012;42(5S1):S58-S71.

25.   Dodson EA, Baker EA, Brownson RC. Use of evidence-based interventions in state health departments: a qualitative assessment of barriers and solutions. J Public Health Management & Practice. 2010;16(6):E9-E15.

26.   Dovey K. Addressing structural inhibitors of change in public health sector organizations: A South African case. J of Change Management. 2008;8(1):37-56.

27.   Erwin PC, Greene SB, Mays GP, et al. The association of changes in locah health department resources with changes in state-level health outcomes. Am J Public Health. 2011;101(4):609-615.

28.   Fallon MM, Jarris PE, Pestronk RM, et al. Achieving a culture of quality improvement: The vision for public health in 2026. J Public Health Management & Practice. 2010;16(1):3-4.

29.   Fielding JE, Briss PA. Promoting evidence-based public health policy: Can we have better evidence and more action? Health Affairs. 2006;25(4):969-978.

30.   Gillen SM, McKeever J, Edwards KF, Thielen L. Promoting quality improvement and achieving measurable change: The Lead States Initiative. J Public Health Management & Practice. 2010;16(1):55-60.

31.   Gist ME, Locke EA, Taylor MS. Organizational behavior: Group structure, process, and effectiveness. J of Management. 1987;23(2):237-257.

32.   Greenhalgh. Maintaining organizational effectiveness during organizational retrenchment. J Applied Behavioral Science. 1982;18(2):155-170.

33.   Gunzenhauser JD, Eggena ZP, Fielding JE, et al. The quality improvement experience in a high-performing local health department: Los Angeles County. J Public Health Management & Practice. 2010;16(1):39-48.

34.   Hajat A, Cilenti D, Harrison LM, et al. What predicts local public health agency performance improvement? A pilot study in North Carolina. J Public Health Management & Practice. 2009;15(2):E22-E33.

35.   Hanusaik N, O'Loughlin JL, Kishchuk N, et al. Organizational capacity for chronic disease prevention: A survey of Canadian public health organizations. European Journal of Public Health. 2009;20(2)195-201.

36.   Herman RD, Renz DO. Theses on non-profit organizational effectiveness. Nonprofit and Voluntary Sector Quarterly. 1999;28(2):107-126.

37. Hornung S. Alienation matters: Validity and utility of Etzioni's Theory of Commitment in explaining prosocial organizational behavior. Social Behavior and Personality. 2010;38(3):1081-1096.

38. Huckabee M. A vision for a healthier America: What the states can do. Health Affairs. 2006;25(4):1005-1008.

39. Institute of Medicine – Committee on Assuring the Health of the Public in the 21st Century. The future of the public's health in the 21st century. The National Academies Press. Washington, DC. 2003.

40. Institute of Medicine – Committee for the Study of the Future of Public Health. The future of public health. The National Academy Press. Washington, DC. 1988.

41. Jacobs JA, Dodson EA, Baker EA et al. Barriers to evidence-based decision making in public health: A national survey of chronic disease practitioners. Public Health Reports. 2010;125:736-742.

42. Joly BM, Shaler G. Booth M, et al. Evaluating the multi-state learning collaborative. J Public Health Management & Practice. 2010;16(1):61-66.

43. Kimberly JR, Rottman DB. Environment, organization, and effectiveness: A biographical approach. J of Management Studies. 1987;24(6):595-622.

44. Kindig D, Mullahy J. Comparative effectiveness – of what? Evaluating strategies to improve population health. JAMA. 2010;304(8):901-902.

45. Kimberly JK, Rottman DB. Environment, organization and effectiveness: A biographical approach. J of Management Studies. 1987;24(6):595-597.

46. Kmetz J. Comparative prediction of organizational structure and effectiveness from four models of structure. Academy of Management Proceedings. 1981;239-243.

47. Kotter JP. Leading change. 1996. Harvard Business School Press.

48. Kreuter MW. State health promotion capacity: A DHPE assessment report. July 2003.

49. Krieger, N. Proximal, distal, and the politics of causation: What's level got to do with it? Am J Public Health. 2008;98(2):221-230.

50. Landrum LB, Baker SL. Managing complex systems: Performance management in public health. J Public Health Management Practice. 2004;10(1):13-18.

51.   Lee SY, Whitford AB. Government effectiveness in comparative perspective. J Comparative Policy Analysis. 2009;11(2):249-281.

52.   Leischow SJ, Milestein B. Systems thinking and modeling for public health practice. Am J Public Health. 2006;96(3):403-405.

53.   Lenaway D, Corso LC, Buchanan S, Thomas C, Astles R. Quality improvement and performance: CDC's strategies to strengthen public health. J Public Health Management Practice. 2010;16(1):11-13.

54.   Liber, E. Mixing qualitative and quantitative methods: Insights into design and analysis issues. J of Ethnographic & Qualitative Research. 2009;3:218-227.

55.   Madamala K, Sellers K, Pearsol J, et al. State landscape in public health planning and quality improvement: Results of the ASTHO survey. J Public Health Management & Practice. 2010;16(1):32-38.

56.   Mason M, Schmidt R, Gizzi C, Ramsey S. Taking improvement action based on performance results: Washington State's experience. J Public Health Management Practice. 2010;16(1):24-31.

57.   Mays GP, McHugh MC, Shim K, et al. Institutional and economic determinants of public health system performance. Am J Public Health. 2006;96(3):523-531.

58.   Mays GP, Scutchfield FD, Bhandari MW, Smith SA. Understanding the organization of public health delivery systems: An empirical typology. Milbank Quarterly. 2010;88(1):81-111.

59.   McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA. 1993;270(18):2207-2212.

60.   Meier RM, Andrews R, Boyne GA, et al. Wakeup call: Strategic management, network alarms, and performance. Public Administration Review. 2010;731-741.

61.   Miles & Huberman. Qualitative Data Analysis – An Expanded Sourcebook. 2nd Edition. 1994. Sage Publications.

62.   Mullahy J. Understanding the production of population health and the role of paying for population health. Prev Chronic Dis. 2010;7(5):A95.

63.   Mullin M, Daley DM. Working with the state: Exploring interagency collaboration within a federalist system. J Public Admin Research and Theory. 2009;20:757-778.

64. National Association of Chronic Disease Directors. PHFAST: Public Health Framework Assessment Tool. 2011.

65. National Association of Chronic Disease Directors. Workshop on Chronic Disease Program Integration. March 29-30, 2006. Atlanta, Georgia. Workshop Summary Report.

66. National Prevention Council. National prevention strategy: America's plan for better health and wellness. June 2011.

67. Pomeranz JL. The unique authority of state and local health departments to address obesity. Am J Public Health. 2011;101(7):1192-1197.

68. Public Health Accreditation Board. Standards and measures: Version 1.0 Application period 2011-2012. May 2011.

69. Redshaw B. Evaluating organisational effectiveness. Industrial and Commercial Training. 2000;32(7):245-248.

70. Riley WJ, Beitsch LM, Parsons HM, Moran JW. Quality improvement in public health: Where are we now? J Public Health Management Practice. 2010;16(1):1-2.

71. Riley WJ, Moran JW, Corso LC, et al. Defining quality improvement in public health. J Public Health Management Practice. 2010;16(1):5-7.

72. Riley WJ, Parsons HM, Duffy GL, et al. Realizing transformational change through quality improvement in public health. J Public Health Management Practice. 2010;16(1):72-78.

73. Saldaña, J. The coding manual for qualitative researchers. 2nd Edition. 2012. Sage Publications.

74. Salinsky E, Garsky EA. The case for transforming governmental public health. Health Affairs. 2006;25(4):1017-1028.

75. Satcher D. The prevention challenge and opportunity. Health Affairs. 2006;25(4):1009-1011.

76. Savoia E, Massin-Short SB, Rodday AM, et al. Public health systems research in emergency preparedness. Am J Prev Med. 2009;37(2):150-156.

77. Scutchfield FD, Marks JS, Perez DJ, Mays GP. Public health services and systems research. Am J Prev Med. 2007;33(2):169-171.

78. Scutchfield FD, Mays GP, Lurie N. Applying health services research to public health practice: An emerging priority. Health Services Research. 2009;44(5PII):1775-1787.

79. Slonim AB, Callaghan C, Daily L, et al. Recommendations for integration of chronic disease programs: Are your programs linked? Preventing Chronic Disease. 2007;4(2):01_0163

80. Sowa JE, Coleman Selden S, Sandfort JR. No longer unmeasurable? A multidimensional integrated model of nonprofit effectiveness. Nonprofit and Voluntary Sector Quarterly. 2004;33(4):711-728.

81. Stazyck EC, Goerdel HT. The benefits of bureaucracy: Public managers' perceptions of political support, goal ambiguity, and organizational effectiveness. J Public Administration Research and Theory. 2010;21:645-672.

82. Tata J, Prasad S. Team self-management, organizational structure, and judgments of team effectiveness. J of Managerial Issues. 2004;16(2):248-265.

83. Tilson H, Berkowitz B. The public health enterprise: Examining our twenty-first-century policy changes. Health Affairs. 2006;25(4):900-910.

84. Todnem R, Macleod C. Editorial: Managing organizational change in public services. J Change Management. 2008;8(1):1-2.

85. US Department of Health and Human Services, Centers for Disease Control and Prevention. National Public Health Performance Standards Program: State public health system performance assessment instrument (versions 2.0).

86. US Department of Health and Human Services, Public Health Service. Healthy People 2000: National health promotion and disease prevention objectives.

87. US Department of Health and Human Services, Public Health Service. Healthy People 2010: Public health infrastructure.

88. US Department of Health and Human Services, Public Health Service. Healthy People 2020: Public health infrastructure.

89. Wholey DR, Gregg W, Moscovice I. Public health systems: A social networks perspective. Robert Wood Johnson Foundation. 2009.

90.   Yin RK. Case Study Research Design and Methods. 4th Edition. 2009. Sage Publications.

91.   Yukl G. Leadership in organizations. 6th Edition. 2006. Pearson Prentice Hall.