Working with the State: Exploring Interagency Collaboration within a Federalist System

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ABSTRACT

In an era of devolution, collaboration between state and local institutions could be an effective tool for state governments to capitalize on local knowledge and respect local autonomy, while maintaining consistent standards and enforcement. However, the benefits to local agencies are less clear. Local agency personnel may have goals that diverge from their state counterparts and significant constraints on their resources, forcing them to consider the opportunity costs of collaboration. This article examines the determinants of subnational vertical collaboration in two settings: nested institutions with parallel missions and institutions with separate, but overlapping, missions. Augmenting an original survey of local public health departments in Wisconsin with data from other sources, we simultaneously estimate models predicting local cooperation with state agencies within and across issue boundaries. Our analysis indicates that management techniques, particularly performance evaluations that are tied to collaborative efforts, are the strongest determinant of collaboration across levels of government. We also find that political context facilitates vertical collaboration across nonnested institutions. Within nested institutions, local agencies are more likely to work with their state counterpart if they lack the capacity to act alone.

Increasingly, state and local government agencies are forging collaborative relationships to address complex public policy problems that cannot, and have not been, solved successfully by any single organization. This pattern holds in a variety of substantive policy settings ranging from environmental to economic development policy. Concurrently, scholars are dedicating growing attention to the dimensions and antecedents of collaborative relationships and the effects of these relationships on public policy (Ansell and Gash 2008; Agranoff 2007; Beierle and Cayford 2002; Butterfoss, Goodman, and Wandersman 1996; Koontz and Thomas 2006; Leach, Pelkey, and Sabatier 2002; Lubell 2003; 2004; Roussos and Fawcett 2000; Zahner 2005). Most of this work has focused on public-private...

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partnerships and other forms of collaboration between government and nongovernmental organizations. However, we know less about collaborative relationships between government agencies that share legal authority to implement public programs (some notable exceptions include Bardach 1998; Chisholm 1989; and Thomas 2003).

Shared policy responsibility may exist horizontally, across agencies at one level of government, or vertically, across levels of government between agencies with either overlapping or distinct functional responsibilities. It is critical that we understand these vertical relationships, given the long-term trend of devolving policy responsibility to state and local governments. Although the nature of federalism and intergovernmental relations in the United States has ranged from cooperative to coercive to contractual (Conlan 2008), fragmentation and shared policy responsibility across levels of government are enduring features of domestic governance (Anderson 1955; Grodzins 1966).

Across a variety of public functions and programs, federal, state, and local authorities interweave funding and act collectively to implement policies and enforce regulatory standards. In many cooperative endeavors, the national government takes the lead. Congress and federal agencies outline the scope and goals of a program and provide most of the funding; states decide whether or not to participate and may help design implementation strategies. Frequently, the national government attempts to coerce states to comply with a national agenda through preemption, funding threats, and conditions attached to grants-in-aid. Although cooperation between national and subnational governments is essential for achieving many policy goals, state government personnel often lack the opportunity to shape their relationships with federal government counterparts.

Relationships between state and local bureaucrats are more variable. Without constitutional limits on encroachment, states have the ability to mandate local activities. At the same time, the subnational setting offers more opportunity to develop equitable cooperative relationships across levels of government. The complex configuration of local government structures and boundaries increases the importance of negotiating any allocation of policy authority. Even within a single state, different types of local government may perform the same function, and those governments may have distinct fiscal limitations and mechanisms for local accountability. Direct orders from the state are not the most effective way to address this local variability. Traditional respect for local autonomy also can prompt states to work collaboratively with local governments rather than usurp their authority. Finally, state and local governments are closer to ground-level implementation where it becomes apparent how problems can cross agency boundaries and expertise. Often, the most effective solution to these complex problems is a coordinated effort by multiple agencies with different authority and expertise.

For all these reasons, states may want to preserve local autonomy, allowing local institutions to respond to local conditions. In these cases, states face a puzzle: how can they cede decision-making authority to local government units while maintaining consistent standards and enforcement? We contend that collaboration between state and local public agencies can be an effective tool for states trying to strike this balance. Collaborating with local bureaucratic agencies allows states to take advantage of local expertise and implement programs that address local problems. At the same time, it protects state authority over programmatic direction and does not jeopardize state compliance with federal mandates. Collaboration also may offer efficiency benefits by reducing overlap in policy effort and
providing the information necessary to direct state resources to communities with the greatest need.

Collaborative vertical relationships provide clear benefits to state agencies but may impose substantial costs on their local partners. Local agencies could have divergent goals, and they may perceive state involvement as interference rather than assistance. Collaboration also can create significant opportunity costs for local agencies with limited staff and financial resources. Local actors may perceive time spent in communication with state personnel as a resource that would be better allocated to programmatic tasks that directly address local needs. Furthermore, as Agranoff and McGuire (2004) observe, local administrators may come under pressure to demonstrate loyalty to the jurisdiction rather than work with other layers of government.

Our goal in this article is to identify the factors that prompt localities to invest time and staff resources in collaborating with state agencies. We compare collaborative relationships between nested institutions (specifically, between local and state public health departments) with the relationships that exist between agencies with separate, but overlapping, missions (between local public health departments and state environmental agencies). The research centers on five issue areas that are significant public problems within the state of Wisconsin, our research setting: groundwater management, fish consumption advisories, lead poisoning, air quality and respiratory illness, and emergency preparedness. We selected these issue areas based on informal interviews with state environmental and public health officials. Because the issues cross agency boundaries and areas of expertise, state officials suggested that collaborative activity is necessary to address these problems. State officials also noted variation in interagency collaboration across the issue areas. For example, recent research indicates that mercury exposure in Wisconsin, primarily due to consumption of contaminated fish, is more widespread than previously estimated (Knobeloch, Gliori, and Anderson 2006). Local health departments, while facing financial and other constraints, must decide how closely to work with state environmental or public health officials to address this problem within their community. Some local health departments collaborate frequently with state officials to provide additional information about fish advisories, whereas others simply direct community members to state Web sites. Finding out what factors encourage local agencies to collaborate could help states design incentive structures that facilitate higher levels of collaboration, both within and across traditional issue boundaries.

Our analysis draws on primary data from a 2005 original Web-based survey of local public health agencies in Wisconsin. We supplement the survey with local-level secondary data that report on environmental and public health conditions, financial resources, and overall political environment. This allows us to test several possible explanations for local participation in collaborative activities, including local agency resources, political context, professional incentives, and the real and perceived status of local problems. Using a seemingly unrelated regression model, we find that the strongest and most consistent determinant of interagency collaboration is the existence of performance incentives for individual bureaucrats. In addition, political context can help create conditions that promote collaboration across issue sectors, while agency resources do more to build collaborative relationships among nested institutions. Our findings suggest that states seeking to enhance their working relationships with local agencies should consider using targeted management strategies to help achieve their goals.
COLLABORATION AND BUREAUCRATIC BEHAVIOR

The broader literature on collaboration suggests that multiple factors are important in creating and maintaining well-functioning working relationships between organizations. One consistent finding suggests that individuals are more likely to collaborate when issues are salient (Leach, Pelkey, and Sabatier 2002; Lubell 2005). Bryson, Crosby, and Stone (2006) predict that cross-sector collaboration will emerge when agencies have been unable to deal with a public problem successfully. This relationship is implicit in much of the recent literature on collaboration, which suggests that “wicked problems” require the attention of multiple agencies working in partnership (McGuire 2006; O’Toole 1997; Thomson and Perry 2006). In other words, we should expect higher levels of interagency collaboration when confronting more difficult public problems. Lubell et al. (2002) demonstrate the importance of problem conditions in explaining the emergence of multiactor collaborative institutions for watershed protection; problem severity indicates failure of existing policy approaches, prompting action to protect an increasingly scarce resource. The effects of problem conditions on collaboration between government agencies have not received the same empirical attention, especially in the federalist context where problem conditions may vary across jurisdictions.

Inside an agency, institutional context or standard operating procedures can have an important influence on bureaucratic behavior (Agranoff 2001, 2004; Bardach 1998; Brehm and Gates 1997; Ostrom 1990; Ostrom, Gardner, and Walker 1994; Wilson 1989). Institutional context may either promote or inhibit collaborative working relationships. On the one hand, collaboration typically requires discretion and flexibility on the part of agency personnel. On the other hand, public agencies tend to value accountability, which can create challenges in terms of fostering interagency collaboration (Page 2004). Case study research indicates that agencies with high levels of collaborative capacity tend to have institutional rules that are structured to reward and encourage innovative collaborative relationships (Bardach 1998). Often, however, standard operating procedures and notions of accountability embedded in bureaucratic culture impede collaborative behavior (Thomas 2003).

Recent research exploring the relationship between management practices and the performance or effectiveness of public agencies may contribute to our understanding of collaborative capacity (Daley 2009; Lynn, Heinrich, and Hill 2000; Moynihan and Pandey 2005; O’Toole and Meier 2003; Rainey and Steinbauer 1999). The use of private sector management approaches within public agencies has increased considerably in recent years. Widely adopted reforms such as benchmarking, managerial flexibility, and performance measurement are based on the notion that institutional management can directly affect agency behavior (Moynihan and Pandey 2005). Nonetheless, disagreement persists regarding the ability of these reforms to improve bureaucratic performance. Some agency personnel doubt whether these new performance management strategies are effective in influencing staff activities (Nigro and Kellough 2000, 2006). In this project, we are interested in understanding the extent to which one type of performance incentive, annual personnel evaluations, can be used to facilitate interagency coordination.

Although the growing use of performance management tools is predicated on the notion that institutional rules shape agency behavior, studies have demonstrated that external factors outside of agency control also influence behavior and performance. One of the more commonly cited external factors is the existence of a political principal or strong political
support (Meier 2000; Moynihan and Pandey 2005; Wilson 1989). Although information asymmetries prevent politicians from exercising complete control over bureaucratic behavior, elected officials use a variety of incentives and monitoring mechanisms to guide and constrain agency activities (Huber and Shipan 2002; McCubbins and Schwartz 1984; McCubbins, Noll, and Weingast 1987). In response to public demands, interest group pressure, or their own policy preferences, politicians attempt to direct agency attention to issues and activities that help them achieve their goals. In the current context, local officials with ambition for higher office may seek to direct local agencies to pay more attention to issues of state priority; meanwhile, politicians in communities whose populations are dissimilar from the larger state population might see more political benefit from pursuing a policy agenda that focuses on locally salient issues.

Finally, the resources available to a local agency may have an important influence on its willingness to collaborate with the state. Past work indicates that resources are a critical factor in understanding public-private partnerships (Zahner 2005). Collaboration can involve high transaction costs, so low levels of financial and human capital resources may act as a constraint limiting agencies’ ability to invest time in sharing information and reaching agreement. However, collaboration may provide an opportunity for small local agencies to fill gaps in their technical capacity and issue expertise. In that case, we may see a negative relationship between an agency’s financial and staff resources and its collaborative activity because large local bureaucracies would have less demand for state assistance.

Our analysis is centered on understanding why some localities engage extensively in collaborative relationships with state agency counterparts and others do not. Our empirical approach is a simplification that captures many, but not all, of the potential explanations driving collaborative relationships. There is a considerable body of literature examining collaborative activities in depth. These cases document the importance of several factors omitted from this analysis. For example, the actions of legal institutions combined with the level of technical knowledge surrounding a problem can directly impact the ability of agencies to work together on public problems (Sabatier et al., 2005; Thomas 2003). Ultimately, there should be some potential for joint gains in collaborative endeavors. In addition, agencies that suffer from high turnover rates, low morale, and chronically heavy workloads may have a much more difficult time engaging in collaborative activities (Agranoff 2007; Bardach 1998; Thomas 2003). In this study, we have focused on the factors that seem most relevant for understanding interagency working relationships within the federalist context.

**MODEL AND DATA**

Data on collaborative activity come from an original Web-based Environmental Health Survey conducted in the fall of 2005. The survey collected information from the environmental health officers in Wisconsin’s local public health departments. Wisconsin has 87 local public health departments. The survey was conducted using a variant on Dillman’s (2000) total response method and achieved the quite high response rate of 68.9%, with 60...
local departments completing the survey. The instrument included questions about the extent of collaboration with two different state agencies, the state Division of Public Health (DPH) and the Department of Natural Resources (DNR), as well as questions about various factors that influence the level of collaborative activity. Relying upon survey data to examine collaboration has both strengths and weaknesses. On the one hand, surveys can be used to collect theoretically important information not routinely captured in publicly available secondary data. On the other hand, surveys, by their very nature, collect information on respondents’ perceptions, not necessarily objective conditions. We augment survey data with existing secondary data to include a range of contextual variables.

Environmental health is an ideal case for examining interagency collaboration across sectors and levels of government. Increased scientific understanding about effects of the natural and built environment on human health has produced demand for a coordinated policy response to measure and control environmental health risks. Monitoring exposure to mercury and other toxins in fish, for example, requires expertise about fish and their habitat as well as expertise about the diet and risk profile of human populations. These sources of expertise are likely to be found in different bureaucratic agencies. Designing strategies to educate the public about fish contamination then calls for local knowledge about fishing practices in a community. Similar policy challenges arise around other environmental health concerns including solid waste and hazardous materials management and the quality of drinking water and surface water bodies. Collaborations across issue sectors and levels of government can help agency personnel identify changes in exposure and develop strategies to reduce negative health impacts.

Our analysis aims to explain why some local public health departments report more frequent collaboration with personnel in state health and environmental agencies. Using data from a single state allows us to hold constant state regulatory requirements that mandate consultation or cooperation across agencies. Dependent variables come from survey questions asking local environmental health officers to report how frequently during the previous year they collaborated with personnel from two state agencies: the DPH within the state Department of Health and Family Services, and the DNR, the main state environmental agency within Wisconsin. The closed ended question offered responses on a seven-point scale ranging from “Never” to “Daily.” Figure 1 shows the distribution of responses about frequency of collaboration. Not surprisingly, local public health officials reported more regular interaction with DPH than with DNR: the mean and mode for DPH is 4, indicating collaboration “a few times per month,” whereas the modal score for DNR is 2, “a few times per year.” Moreover, all local environmental health officers collaborate with DPH at least a few times per year, but officers in four local agencies report that they never interact with DNR. Summary statistics for all variables appear in table 1.

Our focus, like much of the literature on collaborative activities, is on frequency of collaboration as opposed to quality of collaboration. We contend that understanding both aspects of collaboration is important, but collaboration must first occur before its quality

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2 Missing data on survey items reduces our sample size to 58. Although the sample overrepresents agencies from larger and more densely populated counties, five of the state’s 10 smallest counties and 7 of the 10 least densely populated counties are included in the analysis.

3 In July 2008, the Department of Health and Family Services separated into two different agencies. The DPH is now under the Department of Health Services (see: http://dhs.wisconsin.gov/aboutdhs/).

4 See Appendix 1 for question wording.
can be evaluated. Using a survey instrument to evaluate quality of collaboration has limitations: most notably, participants in the same collaborative activity may have vastly different views about the quality of their experiences. There have been some promising advances in measuring the functioning of collaborative relationships, but objective measures, which would be ideal, remain elusive (Koontz and Thomas 2006). We examine frequency of collaboration because it provides a tangible measure of local commitment to collaborative relationships with state officials. Moreover, focusing on frequency is a better strategy for understanding the opportunity costs that local agencies face when considering whether to invest time in collaborating with the state. Using data from the survey, figure 2 shows the types of collaborative activities that local respondents reported engaging in during the previous year. The majority of local agencies exchanged e-mail and telephone communications with both DPH and DNR. Face-to-face contact is more likely to occur within the public health community than across issue sectors due to regularly scheduled and jointly sponsored meetings between local and state health departments.

The first set of independent variables assesses the impact of problem conditions on collaborative activity. Local agencies may be more likely to invest time and resources in

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Figure 1
Frequency of Local Collaboration with State Agencies.

![Graph showing frequency of collaboration with DPH and DNR](image)

Note: Question Wording Appears in Appendix 1.

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Some recent research in public health advocates measuring “partnership synergy” as a tangible outcome of well-functioning collaborative relationships (Lasker and Weiss 2003; Lasker, Weiss, and Miller 2001). This entails identifying a priori the types of outcomes that should be enriched through collaboration and asking respondents to rate their agreement about the achievement of these outcomes.
collaborating with state officials if they perceive the status of environmental quality problems as severe. Severe conditions might reduce the confidence of local agency personnel that they can address the problem without information and expertise from the state. Problem severity also could heighten the salience of the policy problem among the local population, who then demand a stronger bureaucratic response. Finally, it is possible that problem conditions affect patterns of collaboration because of the behavior of state officials. State agencies may compare problem conditions across communities and direct their attention and resources to seeking out collaborative opportunities with local departments serving populations with the greatest need.

Figure 2
Local Health Agencies’ Collaborative Activities with State Agencies.

Note: Question Wording Appears in Appendix 1.
In measuring the effect of local conditions, we identified five issues that have attracted significant policy attention from Wisconsin state and local officials: groundwater management, fish consumption advisories, lead poisoning, air quality and respiratory illness, and emergency preparedness. Each issue area is a pressing problem within the state: for example, childhood lead poisoning in Wisconsin is double the national average, and health planning documents for the state regularly list the incidence of asthma as a critical issue (Wisconsin Department of Health and Family Services, Division of Public Health, Bureau of Environmental and Occupational Health 2007, 2008). We selected issues based on informal interviews with DNR and DPH staff members, who indicated that collaboration between state and local authorities played at least a minimal role in management of all five areas. Collaborative relationships across agencies and levels of government have long been a core element in the state’s approach to groundwater management. A formal-institutional structure supports collaboration on groundwater issues, including shared budgeting among agencies. Conversations with DNR and DPH staff members indicate that interagency collaboration on the remaining four issues occurs less formally and to varying degrees. For example, local public health departments participate in the distribution of fish consumption advisory material prepared by the DNR, a relationship that requires only periodic contact between agencies. In contrast, state and local health departments work closely to mitigate the incidence of lead poisoning, and many local departments have binding collaborative agreements governing their interactions with DPH. The state provides funds for local lead poisoning prevention programs, but there is considerable diversity in how these funds are used. Some local health departments provide blood lead level screenings, others provide information and data on lead poisoning, and still others provide in-home site inspection to identify sources of lead exposure.

We measured the status of these five environmental health problems using the assessments of local health officials, as reported in the Environmental Health Survey. Respondents rated a series of environmental and public health issues on a seven-point scale according to how serious a problem they pose in Wisconsin. The perceived problem status variable in our DPH analysis is an average of responses about the five issues on which local officials may collaborate with state public health agencies. Although DNR regulates and monitors air quality under the federal Clean Air Act, the agency has little involvement in policy addressing respiratory illness or lead poisoning. In the model predicting cooperation with the resources agency, therefore, the perceived problem status index includes only perceptions related to the three remaining issues.6

How closely do local officials’ perceptions reflect the status of environmental quality in their community? Although the perceived problem status variable measures local officials’ perceptions of the severity of problems statewide, we expected these perceptions to be influenced by local conditions. An official grappling with high local rates of lead poisoning would likely perceive it as a more serious problem than an official in a county with low lead poisoning rates. To test this relationship, we collected county-level data from state and federal government sources to characterize the severity of local conditions in the five

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6 Perceptions of groundwater hazard is a combined score including perceptions about the seriousness of both drinking water pollution and general water pollutions. The combined scale is therefore constructed from six survey items, with the averaged score for groundwater treated as a single item. Scale reliability is .71 for the five-issue index and .61 for the three-issue index.
issue areas. As an indicator of groundwater quality, we used the percentage of private wells sampled between 1990 and 2006 meeting the health-based drinking water limit for nitrate-nitrogen. Nitrate contamination is most likely to occur in regions dominated by agricultural activity. Our indicator of urban water pollution problems is the current number of open status sites with contaminated groundwater or soil, normalized by county population. To measure the local public health threat posed by mercury contamination in fish, we used information from the DNR’s fish contaminant database on the average mercury level in fillet samples collected from gamefish and panfish in the county’s water bodies during the period between 1985 and summer 2005.

The severity of the risk from lead exposure is measured as the number of children found to be lead poisoned in the county in 2004, normalized by county population. The number of hospital emergency room visits for asthma in 2002 indicates the status of respiratory health in the county. Finally, in 2006, Wisconsin completed a statewide infrastructure assessment and subsequently directed resources to facilities considered to be at high risk for terrorist attack. These facilities included stadiums, water systems, and chemical facilities. Based on the state’s own assessment of its terrorism risk, to compare risk across counties we used the number of stadiums in each county seating over 40,000, the number of water systems serving a population over 50,000, and the number of archived waste sites that do not qualify for the federal Superfund program. We calculated z-scores for all these measures, averaged across the multiple measures of groundwater contamination and terrorism risk to create a single indicator for each of the five issues, and summed across the issue indicators to create a single variable measuring the severity of environmental health threat in Wisconsin’s counties.

All the problem data are measured at the county level. The jurisdiction of Wisconsin local public health departments typically covers the entirety of one county. The most populous counties have multiple departments, in which case we applied the same county-level data to all departments within the county.

Data were compiled by the Protecting Wisconsin’s Groundwater through Comprehensive Planning project using reports from the Wisconsin DNR, the Wisconsin Department of Agriculture, Trade and Consumer Protection, and the Central Wisconsin Groundwater Center. Accessed in April 2008 at http://wi.water.usgs.gov/gwcomp/index.html. The data source did not allow us to omit well tests conducted after the date of our 2005 survey. Because these tests make up a small portion of the total well samples included in the indicator, we doubt that they affect a county’s overall score.

Data were obtained from the Protecting Wisconsin’s Groundwater through Comprehensive Planning Web site, accessed in April 2008 at http://wi.water.usgs.gov/gwcomp/.

Results are robust to looking at gamefish only and to examining samples from the period between 1995 and summer 2005. We are grateful to the DNR for providing this data.


Data were collected by the DPH, DHFS. Accessed in April 2008 at http://dhfs.wisconsin.gov/eh/asthma/pdf/boawi04.pdf.

Data on water systems come from the US Environmental Protection Agency’s Safe Drinking Water Information System. Accessed in April 2008 at http://www.epa.gov/enviro/html/sdwis/. Data on archived hazardous waste sites come from the US Environmental Protection Agency’s Superfund Information System. Accessed in April 2008 at http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm. State governments are responsible for these archived waste sites, which represent the majority of existing hazardous waste sites across the country. Following September 11, 2001, chemical facilities, hazardous waste sites, and environmental and general infrastructure have been considered important domestic elements that should be protected as part of homeland security.

The z-score index expresses problem conditions as standard deviation units away from the mean, allowing the combination of problem measures scored in different units. A consequence of z-score measurement is that high scores on a variable will be more influential if the variable’s mean or variance is low. As a check on this measurement decision, we also used principal component analysis to derive a factor score of problem severity. Substituting the factor score for the z-score index did not alter our substantive results.
As shown in the scatterplots in figure 3, the relationship between local officials’ perceptions and objective local conditions is surprisingly weak. The emergency management case provides the strongest support for such a relationship, as local vulnerability to a terrorism threat is significantly associated with perceptions that bioterrorism is a serious risk statewide.

On other issues, the relationship between real and perceived problem measures is not significant, although it operates in the expected direction on all issues except for fish contamination. The bottom right panel of figure 3 shows the relationship between combined indexes of problem conditions. On the x-axis is the severity index representing the sum of z-scores for all five environmental quality issues, and the perceptions index appears on the y-axis. As the figure shows, our index of objective environmental quality conditions in Wisconsin’s counties has little correlation with the perceptions of local public health personnel about those conditions (Spearman’s $r = .06; p < .66$).

It appears that other factors have a more important role in shaping bureaucratic attitudes about problems than the local status of the problems themselves. However, it is important to note that this weak relationship may be attributable to measurement problems. One potential problem is a mismatch between the survey questions, which asked about perceptions of problems across the state, and measurement of conditions at the county level.

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15 Scale reliability for the severity index, as measured by Cronbach’s alpha, is .80. The strongest correlations exist among terrorism threat, lead poisoning incidence, and asthma incidence, all of which score highest in the state’s most urban counties.
Another is the possibility that these indicators simply do not capture the reality of problems on the ground. Exposure levels to toxic fish may depend more on patterns of fish consumption than on the fish sampling locations, for example, and our measure of groundwater hazard may fail to address important sources of local risk. Overall, we believe that local officials’ perceptions of risk should be a stronger predictor for the emergence of intergovernmental collaboration than objective conditions because their perceptions will dictate how they choose to allocate their time and attention. Thus, we include the perceptions index as our measure of problem status.16

Professional incentives targeted at individual agency personnel also might help create conditions that promote collaboration with the state. A guiding theme of the literature on new public management is the importance of building accountability into policy implementation processes as a means to achieve programmatic goals. We examine the impact of performance incentives using an item from the Environmental Health Survey that asks respondents to indicate on a seven-point scale the importance of collaboration with various actors, including DNR and DPH, as a factor in the respondent’s annual performance evaluations.

We include each local public health department’s total revenue as a measure of agency capacity. Financial resources might operate either to promote or to suppress collaboration. It may be that local agencies only can engage in collaborative activities if they have sufficient revenue to carry out their required duties. Alternatively, high levels of local capacity may reduce the need for state assistance. Data on agency revenues come from the 2005 Local Health Department survey administered by the state of Wisconsin.17

The remaining variables address political factors that may influence interagency collaboration. Political structure describes the organization of the county government that oversees the health department. Wisconsin’s counties employ diverse structural forms: some counties in our analysis directly elect a county executive, much like a mayor, whereas others have either an administrator appointed by the county board of supervisors or an administrative coordinator with little independent power. The direct election of a local executive clarifies the lines of accountability in county government and may improve oversight of individual departments. A legislative body such as a county board of supervisors faces significant transaction costs in carrying out oversight activities; an independently elected executive often has more opportunity to exercise political control and shift the status quo (Moe 1997). An executive also may have more incentive to promote or discourage cooperation. Collaborative relationships can be a means of strengthening political linkages between the county and the state, which may benefit the executive if he or she plans to seek higher office. Conversely, a local politician may choose to demonstrate independence by encouraging agency personnel to focus on issues of local concern. Of course, it is possible that an elected executive has little interest in public health issues, which would free agency personnel to pursue their own professional agendas. In many settings, however, strong political control has an important effect on agency behavior. The political structure variable is dichotomous, scored 1 for counties with a directly elected executive. Data on county

16 Indeed, when we include objective measures of conditions in the model, they have a small and insignificant impact on collaboration, and their inclusion does not alter other findings. In a model that estimates the effect of each objective condition individually, omitting all other variables, the only significant result is a negative effect for the combined terrorism score on collaboration with DNR.

governing structure come from Conant (2006). The model also includes two county demographic measures—per capita income and the percentage of the county’s population that lives in an urban area—that may affect the local demand for different types of public health outcomes.

Finally, we include a variable that measures how closely the political composition of a county’s local population matches the composition of the state as a whole. We expect that greater distance between local preferences and the preferences of the state population reduces the likelihood that local and state bureaucratic officials will share goals and approaches. The hurdles to collaboration will be higher where local demands do not coincide with state priorities. To assess the political incongruity between local and state constituencies, we include a measure of the difference between the county and the statewide vote in the 2004 presidential election, calculated as the absolute value of the difference in percent voting for the incumbent Republican.

In estimating the models, we use the seemingly unrelated regression technique to account for potential correlation between errors in the equations for collaboration with DPH and with DNR. Seemingly unrelated regression improves the efficiency of our estimates by exploiting information contained in the residuals about unobserved factors that affect a local health department’s level of collaboration with either state agency.18 We estimate the models using both ordered probit and generalized least squares (GLS). Although the probit model is a better fit for the ordered nature of our dependent variables, the results are potentially biased if the asymptotic properties of the maximum likelihood estimator do not hold in our small sample.

RESULTS AND DISCUSSION

Results showing the determinants of collaboration between state and local agencies appear in table 2. Regardless of estimation strategy, the models reveal a strong correlation between the residuals in the equations predicting frequency of collaboration with DPH and DNR (0.55 in the ordered probit model and 0.42 in the GLS model). Tests that the errors are independent of one another reject the null hypothesis of independence at a high level of significance, indicating the existence of some common set of factors that affects the frequency of local collaboration with either state agency. In the presence of this correlation, the seemingly unrelated model increases the efficiency of our results. Based on $\chi^2$ tests, we reject with a high degree of confidence the null hypothesis that all covariates can jointly be constrained to zero.19

The analysis reveals that the most significant and consistent determinant of interagency collaboration is the existence of strong professional incentives, measured as the importance given to collaboration with specific state agencies in respondents’ annual

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18 The seemingly unrelated model only produces efficiency gains when the matrix of independent variable values is different between the equations. The measures of perceived problem status and performance incentives offer these differences. The problem variables are based on a different number of issues in the two equations, and the performance incentives variables measure the importance of collaboration with each specific state agency as a factor in annual performance reviews.

19 Bivariate correlations among independent variables appear in Appendix 2. Although some of the bivariate correlations are high, diagnostic tests reveal no evidence of problematic multicollinearity.
performance reviews.²⁰ Performance incentives boost collaboration both within the local agency’s issue area and across issue boundaries. Figure 4 shows the effect of performance incentives on the frequency of collaboration. From the ordered probit estimates, we can calculate how a variable affects the likelihood of a respondent falling into one category versus another in reported frequency of collaboration. Fixing all other variables at their mean values, a shift from the minimum to the maximum value on the importance of collaboration with DPH on a respondent’s performance review—a shift from 1 to 7 on the seven-point scale—increases the probability that a respondent reports collaborating a few times per week from 0.06 to 0.37. In other words, the model predicts that only 6% of bureaucrats who are not evaluated on collaborative activity will work with DPH personnel more than once a week, but if collaboration with DPH is a very important factor in performance reviews, over one-third of respondents will collaborate that frequently. The same shift reduces the probability that local officials collaborate only a few times per year by a difference of 0.24. Collaboration with DNR is less highly valued in the performance assessment of local health department personnel, and it occurs less frequently. However, providing a professional incentive to collaborate with DNR has an even more substantial impact on bureaucratic behavior. Whereas a shift from the minimum to the maximum value on the performance incentives variable produces a 0.24 increase in probability that a local

<table>
<thead>
<tr>
<th>Perceived problem status</th>
<th>DPH</th>
<th>DNR</th>
<th>DPH</th>
<th>DNR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance incentives</td>
<td>0.212 (0.175)</td>
<td>0.042 (0.169)</td>
<td>0.248 (0.188)</td>
<td>0.062 (0.720)</td>
</tr>
<tr>
<td>Agency capacity: total revenue</td>
<td>0.223*** (0.069)</td>
<td>0.305*** (0.087)</td>
<td>0.210*** (0.071)</td>
<td>0.317*** (0.087)</td>
</tr>
<tr>
<td>Political structure: county-executive government</td>
<td>0.248*** (0.188)</td>
<td>0.062 (0.720)</td>
<td>0.210*** (0.071)</td>
<td>0.317*** (0.087)</td>
</tr>
<tr>
<td>Local demand: income</td>
<td>0.045 (0.042)</td>
<td>0.057 (0.042)</td>
<td>0.045 (0.043)</td>
<td>0.060 (0.042)</td>
</tr>
<tr>
<td>Local demand: urban</td>
<td>−0.009 (0.008)</td>
<td>−0.013 (0.008)</td>
<td>−0.09 (0.009)</td>
<td>−0.015* (0.008)</td>
</tr>
<tr>
<td>Political incongruity</td>
<td>−0.027 (0.025)</td>
<td>−0.037 (0.026)</td>
<td>−0.026 (0.026)</td>
<td>−0.029 (0.025)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.074 (1.383)</td>
<td>1.148 (1.271)</td>
<td>2.074 (1.383)</td>
<td>1.148 (1.271)</td>
</tr>
</tbody>
</table>

Note: Estimates come from seemingly unrelated ordered probit and GLS models predicting local agencies’ frequency of collaboration with DPH and DNR. Number of local agencies = 58. Correlation between errors in the two equations = 0.548 (ordered probit), 0.429 (GLS). Tests of independence: \( \chi^2(1) = 13.31*** \) (ordered probit), 10.218*** (GLS). Question wording for perceived problem severity scores appears in Appendix 1.

²⁰ Because this variable is drawn from the survey, we cannot rule out a projection effect in which people who frequently collaborate are more likely to believe that collaboration affects their performance evaluation. Every effort was made to address this possibility in survey design, including placing performance evaluation questions at the end of the survey, several sections removed from asking respondents about the frequency of their collaborative activity.
The variable representing performance incentives is the only factor in our analysis that has a significant effect on collaboration both within and across issue boundaries. Other factors influence a local health department’s willingness to work with either the state health agency or the state environmental agency, if they have an impact at all. Surprisingly, the perceptions of local health agency personnel regarding the severity of environmental quality problems appear not to influence how much they collaborate with either of the state agencies that oversee those problems. Local bureaucrats instead respond to incentives that arise from the immediate work environment and their agency’s political context. Related to the work environment, agency capacity makes a difference for collaboration between nested institutions. Local health departments that have bigger budgets spend less time...
interacting with their state counterpart. A shift in total revenue from the 25th to the 75th percentile produces a 0.23 reduction in the probability that a local health agency will collaborate with DPH at least weekly. It appears that state personnel working within the same issue area can help fill in gaps in expertise for small local agencies; local departments with larger budgets do not have the same demand for state resources.21

The determinants of interagency collaboration within the sphere of public health all come from within the local agency. Bureaucrats who receive professional incentives and lack the resources to address local problems seek out opportunities to work across levels of government. In contrast, the local constituency helps drive collaboration across issue sectors. Local health departments serving urban populations are less likely to collaborate with the state environmental agency: health departments at the 75th percentile of urban composition are 25 percentage points less likely to collaborate at least monthly with DNR than departments at the 25th percentile.22 On its face, this seems like an intuitive result: urban areas may have fewer natural resource issues that require attention from the state. However, in Wisconsin, this does not hold true. Urban areas are rich with natural resources, in part because of the location of the Great Lakes in relation to the state. Instead, we interpret this result as a sign of high transaction costs in urban areas. Most Wisconsin local health departments operate at the county level, but more populated urban areas have both city- and county-level health departments, along with city- and county-level governments. These additional institutions may erode benefits from interagency collaboration because of the additional time and effort required to navigate a more complex political environment.

Other political factors operate in the expected direction but fail to reject the null hypothesis of no effect at traditional levels of significance. Nonetheless, the models offer suggestive evidence that per capita income within the county and political incongruity may have an influence on collaboration with DNR. In the ordered probit model, the \( p \) values for both variables \( (p \approx .15) \) provide a high level of confidence given the small number of observations; using the GLS model, our confidence about the political incongruity result is somewhat lower. These results suggest that local agencies respond to their political environment when considering collaborative activities that reach across issue boundaries. Counties with high per capita income are likely to have larger and more active interest group communities; working with these interest groups may promote a more collaborative approach on the part of local agency officials and prompt them to think about their agency mission more broadly. Conversely, greater distance in political attitudes between a county’s population and the population of the state as a whole makes it more likely that a local agency will receive conflicting signals from their local political leaders and from state agency personnel. Overall, low transaction costs, wealthy constituents who are more politically active, and similarity between local and state political preferences all help create incentives for county personnel to build relationships across issue sectors and levels of government in pursuit of environmental health goals.

21 We also tested the impact of per capita measures of agency staff and revenues. These had no significant effect on collaborative outcomes.
22 This result is significant at the 90% confidence level in the GLS model but falls slightly short of that threshold in the ordered probit model \( (p < .108) \).
CONCLUSION

Cooperative federalism and the growing complexity of public problems create significant demands on subnational bureaucracies. As state agencies become more responsible for implementing federal programs, they must find ways to coordinate policy activity with local bureaucracies that may have conflicting priorities and limited resources to take on new tasks.

We contend that collaborative working relationships between state and local institutions could be an effective tool for state governments to capitalize on local knowledge and respect local autonomy, while maintaining consistent standards and enforcement in an era of devolution. By and large, states stand to benefit from increased collaboration with local agencies. The benefits to local agencies are less clear. On the one hand, frequent collaboration with the state may distract local personnel from other activities, forcing them to consider the opportunity costs associated with collaborative relationships. On the other hand, access to the experience and expertise of state officials may help local agencies make up for shortfalls in their capacity to solve local problems.

Our results suggest that the nature of collaborative relationships between state and local agencies depends on how much agency missions overlap. Among nested institutions addressing the same policy issues, building strong partnerships across levels of government is a rational strategy for managing local resource constraints. We find that local public health offices with larger budgets collaborate less frequently with state officials, presumably because they have the capacity to carry out their mission and address local problems on their own. Smaller agencies reach out for assistance from state personnel who have the most expertise in the agencies’ dominant issue area. In essence, state involvement serves as a substitute for local capacity.

Collaboration serves a different purpose among agencies with separate, but overlapping, missions. Frequent interaction with a state bureaucracy that does not directly address the same set of policy issues can be a distraction from other local activities and relationships. Consequently, local health officers located in urban areas engage less frequently with state natural resources personnel, likely because they are too busy interacting with the many public agencies that are present in their local region. Because local agencies do not perceive cross-sector collaboration as part of their core mission, the political environment also has an influence. Agencies will invest more time building relationships across sectors and across levels of government if they have support from their communities and political superiors. We find that this support is more likely to exist in counties with high per capita income and political beliefs that match those of the state as a whole. Under those conditions, local health officers seem to view cross-sector collaboration as complementary to their existing public health efforts.

Although collaboration plays a somewhat different role depending on the overlap in agency missions, overriding all these results is our finding that management techniques, particularly performance evaluations that are tied to collaborative efforts, are the strongest determinant of collaboration across levels of government. If states view collaboration as essential for addressing some of their more persistent and difficult public policy issues, then this finding suggests an administrative lever that could be engaged to promote local cooperation: encouraging (or requiring) local agencies to evaluate, and reward, collaborative performance on a regular basis. The result reinforces much of the theoretical and empirical literature focused on institutional rational choice: individuals respond to both rules and incentives. But it extends the boundaries of this relationship to indicate how incentives can be used
to foster collaboration among government agencies. No other factor in our analysis influences local collaboration as clearly or consistently as the provision of performance incentives.

Surprisingly, the severity of problem conditions does not appear to motivate increased interagency collaboration. This result contradicts much of existing literature in collaborative environmental management that suggests collaborative action, often between government and nongovernmental actors, stems from problem severity. For bureaucrats situated in the context of a local public health agency, it seems that grappling with a severe problem is not enough to prompt more frequent engagement with state actors. It may be that local bureaucrats perceive state agency personnel as interfering with their work rather than assisting it. Even when they desire more interaction with the state, local actors need to find state personnel they can work with and then invest time in building a collaborative relationship. These costs may be too high unless significant incentives exist to promote collaboration—particularly selective incentives in the form of performance reviews, or perhaps more generalized incentives created by the local political environment. Future research should investigate this finding in more detail as it suggests there may be an interesting puzzle to solve in understanding the relationship between bureaucratic culture, problem conditions, and agency behavior.

**APPENDIX 1 QUESTION WORDING**

**Frequency of Collaboration**

Public health and environmental issues frequently involve collaborative activities between personnel from different agencies. We define collaboration as a formal or informal process where agencies cooperate and work together to address a problem. The next set of questions ask about collaborative relationships; we are particularly interested in understanding collaboration between personnel from Wisconsin’s local public health departments, the Division of Public Health within Wisconsin’s Department of Health and Family Services (DHFS) and Wisconsin’s Department of Natural Resources (DNR).

During the past year, please indicate how often you have collaborated with personnel from:

(Among seven agencies presented) Division of Public Health within DHFS; DNR

1. Never
2. A few times per year
3. Once per month
4. A few times per month
5. Once per week
6. A few times per week
7. Daily

**Forms of Collaboration**

The next questions focus on ways that you have collaborated with staff from other agencies in the last 12 months. Please indicate whether or not you engaged in any of the following
activities within the past year with staff from the Division of Public Health within Wisconsin DHFS; Department of Natural Resources.

Please choose all that apply: regularly scheduled meetings, telephone calls, e-mail exchanges, jointly authored documents, jointly sponsored meetings, jointly sponsored press releases, other: (blank space for self-report).

Perceived Problem Status

Listed below are several environmental and public health issues. In your opinion, are any of these issues currently serious problems in Wisconsin? Please use the following scale ranging from 1 to 7 with 1 indicating the issue is not at all serious and 7 indicating that the issue is extremely serious.

(Among 15 issues presented:) drinking water pollution, general water pollution, lead poisoning, contaminated fish consumption, bioterrorism risks, respiratory illness

Performance Incentives

Is your ability to collaborate with the following organizations an important factor in your annual performance evaluations?

[Among seven agencies presented:] Division of Public Health within DHFS; DNR

A seven-point scale appears with 1 labeled “Not a Factor” and 7 labeled “Very Important Factor.” Respondents also were given the opportunity to respond “Don’t Know” for individual agencies.

APPENDIX 2

Table A1

Bivariate Correlations

<table>
<thead>
<tr>
<th></th>
<th>Problem Status</th>
<th>Performance Incentives</th>
<th>Revenue</th>
<th>County Executive</th>
<th>Income</th>
<th>Urban</th>
<th>Incongruity</th>
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<tr>
<td>Perceived problem status</td>
<td>1.00</td>
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<td></td>
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<tr>
<td>Performance incentives</td>
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<tr>
<td>Total revenue</td>
<td>−0.19</td>
<td>0.16</td>
<td>1.00</td>
<td></td>
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<td>County executive</td>
<td>0.12</td>
<td>−0.10</td>
<td>0.18</td>
<td>1.00</td>
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<td></td>
<td></td>
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<tr>
<td>Per capita income</td>
<td>−0.10</td>
<td>−0.02</td>
<td>0.33**</td>
<td>0.55***</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent urban</td>
<td>0.04</td>
<td>0.03</td>
<td>0.24*</td>
<td>0.77***</td>
<td>0.71***</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Political incongruity</td>
<td>−0.04</td>
<td>−0.06</td>
<td>−0.07</td>
<td>0.27**</td>
<td>0.35***</td>
<td>0.25*</td>
<td>1.00</td>
</tr>
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</table>

*p < .10, **p < .05, ***p < .01.

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REFERENCES


