Factors Affecting Fire Suppression Costs as Identified by Incident Management Teams

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Abstract—This study uses qualitative sociological methodology to discover information and insights about the role of Incident Management Teams in wildland fire suppression costs. We interviewed 48 command and general staff members of Incident Management Teams throughout the United States. Interviewees were asked about team structure, functioning, and decision making as a framework for determining their views on issues that drive costs. Topics affecting costs that emerged prominently are discussed in this report. They include, in no particular order: lack of decision space; outside costs over which Incident Management Teams have no control; rigid policies and rules limiting the ability to manage effectively, including cost-effectively mitigating for safety dangers on the ground; external decisions affecting costs; use of sophisticated technology; expanding public demand for information related to sophisticated technology; increased use of contracting for equipment and services; other demands on the agency; increased aircraft use; agency reorganizations affecting workforce availability; and new rules and regulations limiting flexibility needed for geographic differences. These findings should be useful in addressing wildfire suppression cost issues in the future.

Keywords: wildfire suppression costs, Incident Management Teams, qualitative sociological research

Introduction

In recent years, expenditures on wildfire suppression have escalated, forcing reallocations within fiscal years and supplemental budget requests to cover unexpected high costs. Although the issue of cost containment has become widespread, information about what affects the expenditures is not. One study (Gonzales-Caban 1997) looked at the effect of individual managers on prescribed fire costs, but it did not address wildland fire suppression costs. Another (Donovan 2005) compares costs of contracted crews to that of agency crews.

In the aggregate, the rise in expenditures can be related to known factors such as 1) increased residential development in former wildlands (Wildland-Urban Interface, or WUI) (Snyder 1999); 2) suppression-related fuel build-up over the last century resulting from, in many cases, several missed fire cycles in fire-dependent ecosystems (Arno and Brown 1991); and 3) a tendency toward warmer, drier weather conditions over the past several decades, especially in the western part of the country (Calkin and others 2005; National Academy of Public Administration 2002).

However, these factors alone cannot explain the variation in expenditures among fires. In many cases fires that seem quite similar physically, and occur in similar biological and social settings, often have significantly differing suppression costs.

Researchers and managers speculate that fire suppression management by Incident Management Teams (IMTs) may relate heavily to costs, but there has been little scientific investigation of this premise. Calls for cost containment and efficiency have not, until now, led to a scientific look at the Incident Command System (ICS), nor at IMT structure, functioning, and decision-making processes as they affect costs. Likewise, incident commanders and members of their staffs have never, in any systematic collective study, been asked for their views on reasons for incident cost escalation, nor for what they believe may, or should, be done to address the cost issue.

Studies addressing decision making in the context of fire suppression have most often focused on one of four things: perceptions of risk and how those perceptions influence decision making (Cortner and others 1990; Taylor and others 1988; Wise and Freitag 2002), decision-support tools to aid in fire suppression decision making (Donovan and Noordijk 2005; Mills and Bratten 1988), economic theory (including risk and uncertainty) behind fire management decisions (Blattenberger and others 1984; Donovan and Brown 2005; Mills and Bratten 1988), and reviews of past incidents and the decisions that were made (Meuchel and Poncin 2004; National Academy of Public Administration 2002). Additionally, most of these studies looked at decision making from the standpoint of fire managers, not IMTs or interactions between land managers and IMTs.

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Fire suppression cost studies have not addressed the preceding issues either. They often focus on attempts to relate fire characteristics to the costs of suppression, either by using statistical models or taking into account the professional judgment of those fighting the fires (for example, see Schuster and others 1997; Steele and Stier 1998; Truesdale and others 1995; USDA Forest Service 1995). Moreover, it has been our experience over the last seven years working in this area that statistical models relating fire expenditures to fire characteristics explain only a portion of the variation in suppression costs, leading to further questions about what other factors are influencing expenditures.

Other studies describing factors contributing to rising fire suppression costs and what can or should be done about them are scarce. This is curious because fire costs have become a hot topic, especially since suppression expenditures have begun to significantly affect funding for management of public natural resources. Agencies that administer public lands have approached the issue of cost containment in several documented ways (Meuchel and Poncin 2004; Strategic Issues Panel on Large Fire Cost 2004; USDA Forest Service, USDI, and National Association of State Foresters 2003). For instance, any federal jurisdiction fire over $5 million is required to have an Incident Business Advisor to oversee spending on the fire. Guidelines have also been established regarding approval and certification of the chosen suppression alternative in the Wildland Fire Situation Analysis. For the Forest Service, the Regional Forester must certify the WFSA for any fire with estimated suppression costs of more than $10 million, while the WFSA for any fire greater than $50 million must be approved by the Chief of the Forest Service. Other examples of cost containment measures include reducing the use of large helicopters and air tankers whenever possible and increasing the use of state and local resources. However, there is no published material that synthesizes extensive input from those whose on-the-ground experience relates most closely to the topic—the IMT members themselves.

In theory, and in practice, persons with a wide breadth and depth of experience, training, and knowledge in real-life situations have meaningful insights and valuable information about their field of expertise (Creswell 1998; Gold 1997; Rose 1960; Spradley 1979). This study uses both qualitative and quantitative sociological methodology, together with economic methodology, to address the cost issue with those most intimately involved in suppressing large wildland fires—IMT command and general staff members themselves.

Each wildland fire emergency is unique, often involving dangerous and rapidly changing events. This study provides information that may be applied to guide future firefighting policies and decisions to improve efficiency and cost effective suppression actions. Its application will not 1) diminish focus on firefighter and public safety or 2) compromise the coherence of IMTs and usefulness of the Incident Command System.

Our Approach

In the first two phases of our multi-phase study addressing decision making in the context of large fire suppression, our project team is using qualitative sociological methodology. This includes in-depth interviewing, sociological sampling, and qualitative analytical methods described by Driessen (1997); Glaser and Strauss (1967); Schatzman and Strauss (1973); and Strauss and Corbin (1998). This is an inductive research approach that allows issues and solutions to arise from "persons in-the-life" who are recognized as "experts" in their field.

Over an eight-month period, researchers conducted 48 in-depth interviews nationwide. With one exception, selected individuals were current or former members of either National (Type 1) or Area (Type 2) IMTs and were from all geographic areas where federal IMTs are located. The exception was a member of a state team, neither generally within the national IMT rotation nor under federal control for assignments. Most interviewees were current employees; however, we interviewed some recently retired former team members to obtain a historical context for the study.

We conducted each interview using a written interview guide to direct and focus the conversation on topics pertinent to the study. (See Appendix A for a sample interview guide.) We designed the guide to cover the general topics of IMT structure, function, and decision making as a framework for getting at the cost issue. Subtopics within these general topics allowed the interviewer to probe more deeply to "flesh out" the topics and ensure that interviewees did not inadvertently leave out or forget to mention important information. We inquired about the cost implications embedded in each topic so that no avenue of thought in this arena was overlooked.

The interview guide was a "living document." We often made minor changes in it after interviews, incorporating new or changing information so that other interviewees could expand on what we had heard. Likewise, we deleted references to topics that appeared to be so well covered that no new information was being revealed.

To obtain a wide range of perspectives we used stratified sociological (snowball) sampling. Interviewees were selected according to 1) team type, 2) agency represented, 3) position in the command and general staff organization, and 4) location, using Geographic Area Coordination Centers (GACCs) as a guide. Time constraints and logistical challenges of personal, on-site interviews notwithstanding, we were able to obtain interviews with a wide variety of team members. Persons interviewed represented teams from each GACC (table 1), all Federal and many state agencies whose employees participate on teams, and a sampling of all positions in the command and general staff organization of both Type 1 and Type 2 IMTs (table 2).

Specifically, study participants included 28 members from Type 1 IMTs and 20 from Type 2 teams. Agencies represented include the Bureau of Indian Affairs, Bureau of

Table 1—Number of interviewees by Geographic Area Coordinating Center (GACC).

GACC	Number of interviewees
Northern Rockies	12
Rocky Mountain	3
Southwest	5
Great Basin (Both East and West Zones)	8
Pacific Southwest (Both North and South Zones)	6
Pacific Northwest	8
Southeast	3
Alaska	3

Land Management, Forest Service, Fish and Wildlife Service, National Park Service, and also natural resource management or fire protection agencies from the states (or various counties within states) of Alaska, California, Colorado, Montana, Utah, Washington, and Wyoming. Every interviewee was assured confidentiality, meaning that information they provided could not be associated to them. Tables 1 and 2 contain additional general information about interviewees.

Our study is divided into three distinct phases, each building on information obtained in the previous phase. During Phase 1, we interviewed IMT members and former members in the Northern Rockies area. Here we sought to discover, in members' own words, how IMTs are structured, how they function, the decision space they operate under, how they make decisions—both formally and informally—and how it all relates to incident costs. We modified the interview guide slightly after each interview to reflect emerging information.

During Phase 2, we expanded the study to include interviews with team members in other GACCs throughout the United States. We continued to revise our interview guide to more narrowly focus on cost issues while retaining the most salient features of former guides.

Table 2—Number of interviewees by Incident Management Team (IMT) position.

IMT Position	Number of interviewees
Incident Commander (or Deputy)	22
Operations Section Chief	8
Planning Section Chief	5
Finance Section Chief	5
Logistics Section Chief	3
Safety Officer	2
Information Officer	1
Liaison Officer	1
Air Support Group Supervisor[a]	1

[a] Position not officially considered command/general staff on IMTs but used as such by some, especially in incidents requiring a large number of aviation resources.

In Phase 3, we intend to complete analysis of information obtained during the first two phases, using it as a basis for further quantitative inquiry (for example, surveys) and as a springboard for other qualitative research. One of the strongest features of our approach is that any quantitative investigations we undertake will be well grounded through qualitative research that reveals the real life experiences of persons who are intimately involved with the phenomena under investigation. This lessens chances of spurious or inaccurate assumptions by researchers at the outset and enables us to focus on solutions that arise from and make sense to those who regularly deal with wildfire incident management and its costs.

In this report we recount the common experiences, impressions, and views of 48 recognized experts in field-going wildfire suppression management, that is, persons who serve on the command and general staffs of Incident Management Teams. Based on their experience, many, if not most of these individuals, identified the following key factors that influence wildfire suppression costs. In some instances, quantitative research may be available to confirm their experiences; however, in others, we have no other data to either confirm or refute these findings, suggesting these topics may prove ripe for future investigation.

Initial Results

This Research Note describes some initial findings from the 48 interviews conducted in Phases 1 and 2. Although interview data have yet to be analyzed in depth, the themes we present below (in no specific order) were voiced by most of the 48 interviewees. We sent out an earlier draft of this Research Note, presenting the same results contained in this version, to all 48 interviewees for review. Those who provided comments reported that it accurately reflected their experiences. For example, an IC stated: "Great job capturing certainly what I shared and what appears to be a number of general agreement by the 48 individuals you interviewed."

Decision Space

All IMT members interviewed for this study indicate that cost effectiveness is a major objective documented in their team's operating plan and/or team meetings, as well as in Wildland Fire Situation Analyses. However, they believe team decision space leaves them limited room for major cost-reducing decisions. IMTs work for the receiving agency administrator (land manager). Delegations of Authority, Wild Fire Situation Analyses (WFSAs), and agency in-briefings typically result in teams receiving specific strategic objectives that include cost considerations or prescribe actions that dictate the necessity of certain tactics (and therefore certain costs). Even though these initial objectives are subject to negotiation and daily review between the IMT (normally the Incident Commander or deputy) and the agency administrator,

the latter makes the final overall decision on suppression objectives, including expenditures. Multi-agency coordinating (MAC) groups, Area Commands, and even the Dispatch System, including local (expanded dispatch), geographic area (GACC), and national level coordination centers, impose firefighting resource priorities or influence resource use. Such prioritization and influence can have large effects on expenditures associated with a specific team on a suppression assignment. Likewise, a lack of ordered firefighting resources in times of overload fire occurrence can have a major effect, either increasing costs by prolonging a fire or, in some cases, decreasing costs significantly when the weather changes before needed suppression resources arrive.

Outside Costs

IMT members also report they have no control over the costs that host agencies charge to the fire, either prior to their arrival, during their stay, or after they leave. In some cases these are not consequential, but there are times when these can be significant, especially after the IMT leaves. This is particularly true now because, under recent policy changes, rehabilitation of the burned area (Burned Area Emergency Response [BAER]) is now also chargeable to the suppression effort. In the past, only rehabilitation of the suppression activities (for example, fire lines, camp areas, and roads) was charged to the suppression effort. Dispatch functions also accrue charges to the incident that are outside the team's ability to control, especially when large expanded dispatch functions are formed at all levels of the organization to support multiple large incidents. In some cases, coordinating centers reportedly stage scarce firefighting resources for anticipated use in emerging incidents or when the potential for escaped incidents exists, charging currently active incidents for the costs. Likewise, in extended incidents when two or more teams are assigned sequentially, the effect that one team's decisions have on the cost of an incident is effectively lost or at best extremely difficult to track.

Policies and Rules

All IMT members acknowledge the need for policies and rules to guide their decision making. However, many believe there has been a significant increase in rules, policies, and procedures during recent years, mandating certain responses and actions. These mandates have come in response to legitimate safety or cost issues, but they are often confusing, overlapping, or even contradictory and missing their target, according to many team members. They say it is difficult to keep up with the perceived ever-changing and ever-tightening policies that govern their activities. Members report that rigid policies and rules constrain a team's flexibility; some rules are viewed as "one size fits all" (for example, mandating arbitrary limits on team size), which they feel is cost inefficient because each incident is unique.

Such policies and rules, in turn, have led to greater risk aversion and the potential for higher costs, especially because many team members are concerned about their agency's support should something go wrong on an incident. These factors sometimes limit the team's ability to manage effectively and can significantly affect an individual team member's ability to act quickly and decisively for fear of inadvertently violating a rule. Some team members say they plan to quit team membership (or have quit), citing this issue as the real reason behind their decision.

Safety

Firefighting is inherently risky. Safety in suppression actions, as in most everything else, has cost implications. All IMT members report that safety issues preempt all others in their decision-making process. While no one is willing to compromise safety to save money, many interviewees have suggested they can cost-effectively mitigate for dangers on the ground better without the extensive rules and policies network that currently governs suppression work. Members explain that the analysis paralysis promoted by these extensive rules actually tends to decrease safety and cost effectiveness because it inhibits rational response to specific events. In addition, many IMT members feel subject to increased legal exposure because they perceive their agencies are no longer willing to back them in the positions they have been asked to fill. Combinations of such factors lead to a certain amount of risk aversion, which often results in an increase in suppression costs. In this specific arena, several team members expressed concern that their employer might use their remarks to the interviewer against them.

External Decisions

Sometimes political and/or strategic decisions that have large cost impacts are made in upper levels of an agency or political entity. These decisions, outside the team's control, are not necessarily perceived as unsound, but they do impact costs of suppressing a fire. One example is requests to stage numerous expensive resources at the fire camp for possible future use elsewhere in the area. Another is visits from highly placed officials whose large entourages (security, information, and so forth) have reportedly been charged to the fire. A third example is costly "political" suppression action—deemed not necessary by IMT members and/or not in line with management policy, but requested or prescribed by officials outside the team to allay immediate public concerns (for example, "political smokes" [fires] well inside control lines that pose minimal escape threats but receive suppression actions to satisfy expressed public concern). A final example is delays in receiving necessary resources and infrastructure items. These are now sent "cheapest way" rather than "quickest way," which can increase suppression effort and costs in the long run—we have heard amounts up to $40,000 for each hour the team is delayed.

Technology

Increased use of sophisticated technology to manage wildfires has been a big influence on escalating fire suppression costs. Even though such technology can improve data availability for managing and documenting incidents, it has not come cheaply. IMT members express concerns that reliance on technology can present significant safety and operational problems when computer systems are down. Fires that 20 years ago would have had only a radio link with the host agency dispatch now routinely have multiple (we have heard up to 30) temporarily placed phone and data processing lines linking them to the host agency and elsewhere. Installing, maintaining, and providing technical support for this equipment is expensive. Most teams have had to add at least one technical support specialist to their roster, sometimes at the expense of traditional suppression-oriented positions. Likewise, whereas team members previously could usually work in tents, required use of electronic equipment now necessitates a relatively dust-free environment and air-conditioned housing. This has resulted in a need for office trailers, carpeting, and either stringing electric lines to remote fire camps or locating camps at some distance from incidents to access utilities. This increases transportation time (a cost factor) and decreases time available to work on suppression activities.

Public Information

The public demand for more and more information has increased costs. Over the past several years, public demand for immediate and sophisticated information has impacted every function of IMTs and created a need for resources well beyond what was previously necessary (for example, more staffing, more phone lines, and more requests for tours and interviews).

Contracting

According to IMT members, escalated reliance on contracted suppression resources has resulted in cost increases chargeable to fires. Previously, most suppression resources, either personnel or equipment, were government owned or employed. The switch to contracted resources has occurred during the past 15 to 20 years as government agencies charged with suppressing wildfires have attempted to reduce overall costs. This has included downsizing the federal workforce and divesting of equipment this previous workforce would have used in emergency wildfire situations. To meet subsequent workload demands, the preceding government workers and equipment have been replaced with contracted services.

Interviewees perceive the prices contractors charge for equipment and human resources to be very high (in many cases unreasonably so). IMTs have no jurisdiction over these contracts as they are locked in place by contracting guidelines beyond the team's control.

Many IMT members state that work performed by contractors is substandard in too many cases. Training and experience requirements that apply to government employees are reduced or non-existent for contractors hired to do similar work. Interviewees also fault some contractors for lack of accountability when they fail to perform as expected. It is difficult to hold contractors accountable under the wildland fire conditions typified by short timeframes, too few contracting officers, and different standards for performance than what apply to the agency. Furthermore, returning unsatisfactory contracted resources to their home base (especially hand crews) increases transportation costs, necessitates additional time and expense to order replacements, and prolongs suppression activities.

Agency Culture

Another significant factor believed to escalate the need for contracting, and therefore increase costs, is a perceived change within natural resource management agency culture. IMT members state that many employees now no longer view wildfire suppression work as the priority they once did. Some interviewees report that supervisors, intent on meeting home base management targets, are reluctant to permit (and may actually forbid) their staff to participate on fire suppression or team assignments, even after attempts to negotiate solutions. Some describe being chastised on their return to home office stations for what they did not get done to meet management targets while away on an IMT assignment.

Aircraft Use

Interviewees cite increased aircraft use in wildfire suppression as a reason for escalating costs. For instance, heavy lift helicopters, capable of dropping large quantities of water or slinging large loads, were seldom seen on fires a decade or two ago. Now their use is much more routine. Often they are necessary and effective, especially in WUI situations requiring water drops for structure protection and in remote areas with no/few roads for bucket work and quicker delivery of personnel and supplies. However, unless they are well managed, kept busy, and retained no longer than necessary, they can add significantly to fire costs in a short time.

Workforce Issues

Almost every team member interviewed mentioned the effects of recent workforce issues as contributing to the potential for increased costs in suppression activities. Centralization of Forest Service employees involved in Finance Functions has left teams with unfilled finance positions and great uncertainty in the very function they look to for help in tracking costs. Forest Service competitive sourcing has likewise produced uncertainty and insufficient qualified staffing for team technology support and other positions. Moreover, as we previously noted, there is a perception of decreased agency support

for IMT members if something goes wrong. This, together with the increased personal financial liability members have been told to expect, is driving some team members away and discouraging others from pursuing team positions.

Most team members are nearing the ends of their careers, and some are beyond retirement age. The pipeline of replacement employees is viewed as less than full (except in one GACC) and employee morale (in the case of the Forest Service) is usually reported to be low. Incentives to participate as a member of an IMT are not as great as they previously were. Many interviewees predict that as agencies increasingly lose their ability and expertise in suppressing and managing wildfires for the reasons mentioned above, costs will increase. Once lost, the ability and expertise may be difficult or impossible to restore.

Geographic Constraints

IMT members explain that flexibility is necessary when it comes to managing large wildland fires cost effectively. Teams encounter regional cultural differences, depending on where they are assigned in the country. Biophysical characteristics, land ownership patterns, and logistical considerations also differ widely across the country, which forces IMTs to adapt their suppression strategies and tactics to fit local needs. Unless teams are afforded flexibility to adapt to these situations, suppression costs will often be higher than necessary. Yet the flexibility that IMTs require to accomplish work is systematically being compromised by the myriad of new rules and regulations. Additionally, members point out that use of contract crews is inherently less flexible than use of agency crews.

More specifically, agency administrators, influenced by regional culture, local government, and publics in their respective areas, assign different objectives to incoming teams. Achieving varying objectives means teams need to develop unique combinations of strategies and tactics for each incident. "Every incident is different," said many interviewees. Likewise, land management plans, weather patterns, terrain, season of the year, and many other variables combine with a dynamic, ever-changing incident to force continually creative and constantly changing responses from IMTs. As examples, incident objectives are typically significantly different in rural Alaska than in Southern California; likewise, fire camp locations in the Southeast are usually in motels (for seemingly good reasons—snakes, bugs, heat, humidity, and so forth) while in many other parts of the country teams stay in tents. Expenditures do vary according to incident context

Motivation

As a final note of interest, almost to a person, IMT members state their involvement with teams is not motivated by any extra money they may receive for their efforts. Rather, it has more to do with relationships (both to the land and/or other team members), a service ethic, and feelings of accomplishment they obtain from their work. Many believe that involvement in fire suppression was a part of their agencies' previous cultures and they wholeheartedly buy in with that idea.

Discussion _____

Incident management team members are intimately involved in the costs of suppression activities and have given the subject considerable thought. Understanding the complexities and challenges of incident management team structure, functioning, and decision making is essential to prescriptive policy for safe, efficient wildfire suppression and controlling costs.

Emphasizing IMT relationships with agency administrators and land management plans may be one key to reducing costs. Interviewee responses identify two apparent problems in doing this. First, land management plans are becoming less prescriptive and therefore less likely to provide the necessary guidance on suppression strategy and tactics. Second, land managers are under intense pressure to suppress fires, often at all costs, and often it is only after the smoke has cleared that critical attention is paid to costs of the effort. What may appear heroic and appropriate during the heat of battle, at times, becomes much less so when costs are reviewed months later, after the fire is out and the anxiety forgotten.

Agencies may need to deal with certain policy, workforce, public information, WUI suppression, technology, and contracting issues to tighten up incident costs and improve wildfire suppression efficiency. IMT members agree that fire suppression work is inherently difficult, inexact, risky, and ultimately costly. Coping with unpredictability and safety issues, a very important focus, invariably means high costs. Expanded public knowledge of and interest in natural resource management, wildfire suppression in particular, has placed more pressure on agencies to provide up-to-date information through state-of-the-art means. Because the public is increasingly relying on sophisticated technology to access this information, agencies and the IMTs who work for them need the staff and technology to provide it. Such realities are additional contributors to increased wildfire suppression costs.

While factors outside the scope of this study (for example, federal fiscal policy and political realities) may, at times, drive the outcomes relating to these issues, we need to realize all the trade-offs as we seek solutions to rising costs. Enacting more rules, regulations, and policies to govern actions does not appear to be a workable solution, according to interviewees. If we are to address costs in a safe, effective manner, we need to understand the environment and challenges experienced by the people who make the critical decisions in the field and base future decisions at least in part on their informed input.

To completely understand the factors influencing wildland fire suppression costs, we need to learn the perspectives of other key incident management participants. One very important group is land managers. Throughout our interviews, the interactions between local land managers (both agency administrators and their staffs) and IMTs were brought up

as an essential factor influencing costs. During the life of an incident, critical interactions take place between IMTs and land managers on a regular basis. Therefore, examining results from this study without understanding issues and challenges associated with large fire suppression experienced by land managers will provide an incomplete picture. Other groups whose crucial roles in fire suppression costs need to be understood include: 1) dispatchers and dispatch coordinators who play a big role in obtaining resources for suppression activities on large wildfire incidents, 2) Fire Use Management Teams (FUMTs), and 3) Type 1 suppression resources such as smokejumpers and hotshot crew members. According to our interviewees, these groups can significantly affect IMTs' operating environments.

Acknowledgments

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Appendix A: Sample Interview Guide

(Team position= _____, Team Type= ___)

Date:

I. Introduction _____

I really appreciate your willingness to visit with me about incident management teams (IMTs). I'll be recording our conversation to accurately document what you tell me so my analysis is valid. I'll also be taking notes as a backup because sometimes the recorders fail.

All interview content is confidential. Any quotations I might use in reports will be attributed to a pseudonym. Because you are the XXth interviewee, you are INTXX. If I want to use any quotes from our conversation, I'll be sure to clear them with you.

Hopefully you have been able to read the short study summary I sent you. As we mentioned, we're into Phase 2 of our Incident Management Team study. In the first phase we focused on getting an overview of teams and the environment in which they operate relative to costs. To do this, I interviewed team members located in the Northern Rockies Geographic Area Coordinating Center (GACC) region. I asked them about how their teams are structured, how they function, and how they make decisions about fire suppression activity. In Phase 2 we're focusing in more on fire costs.

As you're probably aware, cost containment in the arena of fire suppression is drawing a whole lot of publicity and interest these days. Instead of second guessing what's going on with respect to fire management teams and cost, we want to allow team members to tell us their stories on cost containment. We want to understand their perspectives on, and experiences with, fire suppression costs. Specifically, we want to learn how IM Team's organizational structure, daily functioning, and decision-making practices on fire incidents interact with and/or influence fire suppression costs. Finally, we want to verify whether what I learned about Northern Rockies teams generally holds true for teams in other GACCs or if there are significant differences among different GACC teams.

Do you have any questions before we get started?

II. Personal Background _____

Let's start with a little background on yourself.

A. What's your current regular job? (Is it part of your agency's fire organization?) How did you end up in this job?
B. I understand you're an _____ for a Type __ Team. How'd you end up in this position?
C. What other team positions have you held and on what types of teams?
D. What GACC is your team in?
E. Have you served on teams in other GACCs? Which ones?

F. Do you happen to have a brochure or handout that describes your team?

III. Team Structure _____

Now we'll talk about IMTs in terms of their structure.

A. Interviewee's Team:
   1. Can you describe the character or culture of your team? Is there anything about your team that makes it unique compared to other teams?
   2. What's the motivation to be on your team?
   3. What agencies are represented on your team?
   4. I've heard that dealing with people has become a major part of a team member's job these days. What are your thoughts on this?
   5. Are costs an issue for your team? Does your team address costs in its operating plan? Do you have a copy of your team's operating plan?

B. Team Types:
   1. What are the key differences between Type 1 and Type 2 teams?
   2. Do these differences affect fire suppression costs? How?
   3. Do you have any suggestions on how teams could be structured/configured to be more cost effective?
   4. What do you think about the use of formalized Type 3 teams?

C. Team Size:

   I understand there are short teams and long teams.

   1. Is it customary for teams in your GACC to go as short teams or long teams?
   2. What determines whether you go as a long team or short team?
   3. Does team size affect costs? Ability to achieve objectives? The team itself?

D. Team Selection Process:
   1. What are your thoughts on interagency teams in contrast to single agency teams?
   2. Some say there's a shortage of qualified people available to serve on teams. Can you comment on this?
   3. Does a shortage of qualified, and available, people to be on teams affect costs?
   4. Is the current trainee program cost effective?
   5. I've been told it takes many years to become qualified for command and general staff positions. What are your thoughts on this?

E. Incident Command System (ICS) (Optional):

1. What are the strengths and weaknesses of ICS?
2. How do these strengths and weaknesses affect costs?

F. GACCs:

1. Have you noticed any difference between teams in your GACC and those in others? In other words, do different GACCs have distinctive personalities?
2. What are the cost implications?

G. Area Command:

1. What's been your experience with area command setups.
2. Are area commands a cost effective way of managing fires? How?

H. Unified Command:

1. What are your thoughts on this setup for managing multi-jurisdictional fires?
2. What do you think about the cost effectiveness of these arrangements?

I. Multi-Agency Coordinating (MAC) Groups:

1. What's been your experience with MAC groups?
2. Do you think MAC groups influence cost effectiveness? How?

J. National Incident Management Organization (NIMO):

I understand policymakers are considering a National Incident Management Organization (NIMO) approach to augment existing teams:

1. Have you heard anything about this proposal?
2. What are your thoughts on NIMO relative to a) incident management teams, b) cost effectiveness, and c) recruitment of team members?

K. Cost Containment Teams:

1. What's your experience with these teams?
2. Do they typically have backgrounds in fire?
3. Have these teams helped or hindered cost containment? How?

L. Incident Business Advisors:

1. What's your experience with these types of folks?
2. Do they typically have backgrounds in fire?
3. Have they helped or hindered cost containment? How?

IV. Team Functioning_____

Now we'll talk about how IMTs function.

A. Team Call up (Mobilization):

1. How do freelancers compare with regular members when it comes to cost effectiveness for team operation?
2. Transportation to the Incident:

a. Any thoughts on how travel to the fire influences suppression costs?
b. Who determines whether teams drive or fly?
c. When teams in your GACC travel by air, do they use contract or commercial carriers? What's the trade-off in terms of costs?
d. Are team members subject to federal travel regulations? If so, does this affect costs?

3. Resource ordering, both initially and during the span of the incident:

a. How do the following resource ordering process elements affect costs:

1) Dispatch System
2) ROSS (Resource Order and Status System)
3) Team Preorder lists vs. Mobilization Check Lists
4) Aviation resources
5) Availability of resources
6) Number of subordinate overhead ordered by section chiefs (What determines this?)

b. Is there any reason why having what you need when you need it where you need it would not result in significant cost savings and meeting your objectives in a timely and safe manner? What's been your experience with this?

B. Team Arrival/In briefing/Taking Over the Incident (Transitioning):

1. What are some elements associated with team arrival, in briefing, or taking over the fire that may have cost implications?
2. Some interviewees say the following may have cost implications. What are your thoughts on the following?

a. Line officer experience/expectations
b. Receiving unit's land management/fire management action plans.
c. WFSA
d. Delegation of Authority
e. Transitioning between teams.
f. Use of host facilities vs. providing/ordering your own

C. Day-to-Day Team Activities:

1. General Routine:

a. Has your team developed any ways to implement your daily routine that might be more cost effective than your past SOP?

2. Security:

I've heard security managers are used more in fire camps now than previously.

a. What's been your experience with this? … Costs?

b. Has the Homeland Security Act done anything to affect fire costs?

3. I've also heard of increasing demand for public information:

a. What's been your experience?
b. Has this affected incident costs?

4. Constraints and Facilitators to Team Function:

a. What are some constraints (hindrances) and facilitators that affect your team?
b. How do they affect costs?

D. Demobilization:

What elements associated with demobilization have cost implications?

V. Team Decision Making _____

A. Decision-making Process:

Describe briefly the process your team uses to make decisions.

B. Team Decision-making Factors:

1. What factors influence team decision making?
2. How do these affect costs?

C. Flow of Decision Making:

1. What has been your experience with the flow of team decision making? In other words, does the flow go from bottom to top, top to bottom, or both?
2. Have you observed anything in team decision making that could be made more cost effective or cost efficient?

D. I understand teams have to make many types of decisions on incidents. Some are internal to the team. Some are external to the team (for example, what the fire is doing). Some are policy decisions. Some are routine decisions made during the course of the day. Others are responses to significant events or emergencies. Some are planning meeting-based. Others are negotiated among ICs, AAs, and Ops Chiefs, and so forth. Still others are matters of safety. Some are tactical in nature, and some are decisions on things outside the current fire's realm. Some are political (public, elected official, and agency pressures), and some are resource constraints-based. Yet others are the personal responsibility of a given individual. Some are "out-of-IC hands." Others are disciplinary decisions

made by the IC. Yet others are "leadership" moments. Still others are "personnel" decisions (team member brings "baggage" with them). Finally, others are "anticipatory" decisions.

1. Can you think of other types of decisions your team has to make?
2. Have you experienced any connection between the type of decision and its cost effectiveness?

E. I'm hearing some team members are becoming reluctant to serve on teams because decisions are increasingly subject to litigation.

1. What are your thoughts on this?
2. Cost implications?

F. Do you think there's any relationship between team members' decision-making styles and the costs of incidents they manage? (Probe: risk aversion—does this perception have any grounding in reality?)

VI. Hidden Costs _____

I've heard some costs get charged to an incident that the team has no control over and never sees. Has this significantly affected costs of any fires you've been responsible for?

VII. Opinion on Cost Containment_____

Now that we've discussed team structure, function, decision making, and hidden costs, and how they influence incident expenditures, tell me what you think is responsible for escalating large fire suppression costs and what can be done about it.

VIII. Additional Information _____

Our study team intends to survey incident management team members about the topic of fire costs. Questions we ask will be based on information we gain through these interviews. To help us with this effort, can you think of anything else I need to know about team structure, function, and decision making, particularly as they relate to fire suppression costs?

THANKS SO VERY MUCH FOR ALL THE USEFUL INFORMATION YOU'VE GIVEN ME! I REALLY, REALLY APPRECIATE THE TIME YOU'VE SET ASIDE FOR THIS EFFORT!

RMRS

ROCKY MOUNTAIN RESEARCH STATION

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