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# **Implementation of a Randomized Controlled Trial**

# in Ventura, California-

# A Body-Worn Video Camera Experiment

No. of Words: 17,979

Submitted in part fulfillment of the requirement for the

Master's Degree in Applied Criminology and Police Management

December 2014

#### Abstract

Police agencies from around the world are currently deploying police practices which have been empirically shown to be ineffective. Yet, alarmingly, there doesn't seem to be any urgency to move away from these ineffective practices and into methods supported by evidence.

It could be that the idea of using evidence from criminological research and running scientific experiments to test the effectiveness of new innovations seems out of reach for local agencies. In reality, this is far from the truth. There is currently, however, a lack of implementation literature for police agencies looking to implement experimentation and transition to evidence-based practices.

The purpose of this thesis is to dispel the myth that integrating an evidence-based policing culture and scientifically testing new innovations is outside the scope of local police agencies. Based on lessons learned from implementing a body-worn video (BWV) camera randomized controlled trial (RCT), this thesis is written to offer the practitioner a real-world thematic guide. This guide aims to assist police agencies looking to implement a BWV camera experiment and provide recommendations on how to integrate and sustain an evidence-based policing culture.

During the Ventura Police Department's (VPD) randomized controlled trial (RCT), we were not only able to implement an experiment with the University of Cambridge but provide a replication study of the first BWV camera randomized controlled trial conducted in Rialto, California. During the implementation of Ventura's BWV randomized controlled trial, we encountered stumbling blocks in the non-compliance of the randomization schedule. We show with verifiable data that we were able to increase officer compliance by 92% and provide recommendations on how to reduce contamination issues by laying an evidencebased foundation prior to implementation. In addition, I offer a recommendation for agencies looking to embrace evidence-based policing to create a guiding coalition with enough influence to support, integrate, and sustain a culture willing to test new innovations.

Our experiment evaluates the effects of BWV cameras on police use of force and citizens' complaints. In addition, Ventura's BWV camera experiment will be the first to empirically test the effects of BWV cameras on prosecution outcomes, particularly the speed of early-guilty pleas and the rate of prosecution. I purposely do not provide any preliminary data relating to use of force, citizens' complaints, and prosecution outcomes. It is too early to show any causal inferences to suggest the effects the BWV cameras are having at VPD. However, early indications suggest that the cameras are having a positive effect. We look to provide statistical strength to Rialto's findings at the conclusion of our 12 month RCT.

#### Acknowledgements

I wish to thank Chief Ken Corney for his encouragement and support. I recognize that this experiment and opportunity would not have been possible without his foresight. I would also like to thank the entire Ventura Police Department, especially those who helped get this experiment off the ground.

I would like to specifically thank Dr. Barak Ariel, who embarked on this experiment with me. I offer my sincere thanks and appreciation for his guidance.

I would like to thank Professor Lawrence Sherman and Dr. Heather Strang whose recommendations enhanced the direction of this thesis.

I would like to thank Chief John Parkinson and Sir Denis O'Connor for showing me how evidence-based policing can be applicable in today's law enforcement organizations.

I would like to specifically thank Jim Bueermann and the Police Foundation for inspiring and challenging me to advance policing efforts through innovation and science.

I would like to thank Lynette Young whose talents improved the direction of this thesis by providing valuable editing.

Most importantly, I would like to thank my wife and children for their support, encouragement, and understanding during my studies at the University of Cambridge.

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## List of Abbreviations

AWS	Amazon Web Services
BWV	Body-Worn Video

- IT Information Technology
- RCT Randomized Control Trial
- RPD Rialto Police Department
- VPD Ventura Police Department

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#### **Chapter One: Introduction**

Imagine walking into an emergency room with unimaginable pain and before you can explain your symptoms, the doctor hands you a prescription. You ask the doctor if this prescription will cure your ailment and the doctor says, "Well, there is no evidence that says it will help, but we have been handing out this prescription for the last 50 years." Now, imagine how much more frustrated you would be if you find out there is actually a cure for your ailment; however, it is the policy of this particular hospital to only write the prescription they have been using for the past 50 years.

Just like in this story, since the beginning of the policing profession, we have been handing out the same type of prescriptions to many of our current crime problems without any evidence to support their application. Many police applications derived in the 1960's were inserted without substantiated evidence. This includes the "three Rs: random patrol, rapid response, and reactive investigations" (Beck & McCue, 2009, para. 5) which remain infused in today's policing model, despite being "intellectually discredited" (Sherman, 2013, p. 10).

This thesis offers significant discussion and encourages all police agencies to move away from the three Rs and into an evidence-based policing model which puts evidence behind police practices. In fact, "Of all the ideas in policing, one stands out as the most powerful force for change: police practices should be based on scientific evidence about what works best" (Sherman, 1998, p. 2). Therefore, the cause of this thesis is to show and demonstrate to other police agencies how it is possible to incorporate the philosophies encapsulated within evidence-based policing.

Once police agencies put aside the antiquated policing model of the three Rs, police organizations can move into the philosophies captured within the Triple T, introduced by criminologist Lawrence Sherman (Sherman, 2013). The Triple T includes Targeting,

Testing, and Tracking (Sherman, 2013). I will show how I incorporated the Triple T during Ventura's BWV experiment and how it can serve as a guide for other agencies looking to integrate evidence-based policing. I cognitively applied the Triple T in Ventura's BWV experiment to show other police organizations what possibilities open up when moving away from the three Rs into a police culture driven by evidence. The Triple T can change a status quo police agency into an agency that targets problems, tests interventions and tracks evidence to see if the chosen intervention works.

So why is the poverty of foresight to implement evidence-based policing still crippling the advancement of law enforcement? It could be that the idea of using evidence from criminological research and running scientific experiments to test the effectiveness of new innovations seems out of reach for a local police department. In reality, this is far from the truth.

It is true, however, that the great majority of literature on implementation "takes us up to the point of deciding to adopt an innovation and says nothing about what to do next to implement that innovation with fidelity" (Fixen et al., 2005, p. 16). This was true for me. I found that there has only been one BWV camera experiment and it was conducted by Chief Tony Farrar in Rialto, California (Ariel, Farrar, & Sutherland, 2014). Chief Farrar was also a student at the University of Cambridge at the time of his experiment and I studied his thesis (Farrar 2012). It did provide help for preparing an implementation strategy for VPD's experiment; but, I am an officer and he was a police chief which gave cause for different implementation approaches.

It is because of this that I have developed an implementation thesis written to the practitioner. This first of its kind thematic implementation thesis was designed to show in demonstrated fashion that not only are scientific experiments possible to implement in a police department but that they offer great worth to our profession. In addition, these

experiments offer our profession an evidence-based foundation where we can begin to use science to achieve an increase in public accountability while maximizing our existing resources.

This thesis is part of a current global BWV camera experiment which aims to provide statistical strength and generalizability for the technology. Currently, there are four graduate students, including myself, at the University of Cambridge who are conducting BWV camera experiments. The methodology of the four BWV experiments are nearly identical as we are all using police patrol shifts as our unit of analysis. A possible future meta-analysis of these four experiments will include the research results from the use of about 2,000 cameras deployed and mounted on thousands of officers who are randomly assigned to wear the cameras during about 25,000 shifts.

In the following chapters, I will show how a police agency can move towards evidence-based policing and implement an experiment to test innovations. In this chapter, I have discussed why police departments resist changing to evidence-based policing and avoid integrating the testing of innovations within their department.

Chapter Two will be a review of literature that will provide valuable information on implementing change. First, a review of global literature on implementing change in any organization will be presented. This review will include Kotter's "8 Step Process for Leading Change" ("The 8-Step Process" n.d., p. 1; Kotter, 2014, p. 1) which will provide the framework for the discussion of implementation in this thesis. Lastly, a review of the only current literature on implementing a BWV camera randomized controlled trial will be reviewed.

In Chapter Three, I will present the research question which provides the direction for this thesis. I will also discuss the value of this thesis in filling the gap in available literature on implementing change in a police agency. I will present the evidence I learned from helping implement an evidence-based culture change and conducting a BWV camera randomized controlled trial at VPD. This evidence with fill gaps in literature in the following areas: the difference between a police chief and an officer implementing an experiment, implementing a culture change within a police organization, implementing a BWV camera randomized controlled trial, and tracking data to sustain the experiment and preserve the integrity of the data by tracking compliance.

In Chapter Four, I will present the need for implementing an evidence-based culture within a police agency. Without this fundamental change, a police agency will not be able to test and integrate new innovations. From my study of evidence-based policing at the University or Cambridge and my work to help VPD embrace evidence-based policing, I will present a thematic guide to implementing a culture change. This will be a valuable resource for any police agency wanting to transition to evidence-based policing.

In Chapter Five, I will introduce Sherman's Triple T guide to validate the steps necessary to test an innovation (Sherman, 2013). The first step in an implementation strategy is to target the problem that needs to be solved and develop the questions or hypotheses to guide the experiment. The next step is identifying the intervention to test. BWV cameras are being testing at VPD to see if they will reduce use of force and citizens' complaints. BWV will also be tested to see if it will affect prosecution outcomes. I will use the evidence I learned from implementing a BWV camera randomized controlled trial to present a thematic guide to implementing a RCT. This will include the importance of theories to validate the innovation to be tested. It will also include making the camera decision and the decision on how to store, share, and retain video files.

I will devote Chapter Six to Sherman's third T, tracking (Sherman, 2013). I will show evidence of the importance of tracking data to preserve the integrity of the RCT. If officers use cameras on days that not part of the randomization schedule, the data for the RCT can become so polluted that it will be ineffective in showing causation.

I will show how tracking compliance is in integral part of VPD's experiment. I will show the steps we took to improve compliance. I will show data on how our intervention improved our experimentation contamination by 92% over a four-month period. While we experienced success in reducing contamination, I recognize there are areas where we could have been more effective agents of change. I provide recommendations on how to reduce contamination issues to increase internal validity and allow the results to be generalizable for other police agencies looking to adopt BWV cameras. I will also show how problems with compliance can be overcome using experiences from VPD's randomized controlled trial.

In Chapter Seven, I will present recommendations for police agencies looking to implement a BWV camera experiment. An important recommendation is the need for a transition team to lead the RCT. I will provide an organization chart showing the transition team members and their responsibilities. I will also make a recommendation for the need to upgrade IT systems in anticipation of future technological demands such as the storing of onscene photographs taken from smart phones.

Chapter Eight will be a discussion of the findings of my research on implementing a BWV camera experiment. I will discuss the importance of a guiding coalition to lead the evidence-based policing culture change and a transition team to lead the RCT.

I will include in my findings a discussion of cloud-based storage for police evidence. I will also include how a police agency can sustain an experiment and preserve the integrity of the data by tracking compliance. The final section will discuss the unique role that the University of Cambridge plays in educating and assisting criminology students in evidencebased practices.

#### **Chapter Two: Literature Review**

This chapter will have two sections that will focus on the importance of a literature review in an implementation plan. The first section will review literature on the topic of creating a cultural change within an organization. This literature will be a valuable resource to anyone planning to implement change in any organization. The second section will review a University of Cambridge thesis written by Chief Tony Farrar (Farrar, 2012). This thesis is the only known literature on the implementation of a randomized controlled trial of BWV cameras. The focus of this review will be a summary of how Chief Farrar implemented the experiment.

## Literature on Organizational Cultural Change

In this first section, I will review global literature that supports a cultural change. It will show that, as research suggests, it is very difficult for any organization to embrace change. Changing an organization to an evidence-based culture that is open to seek and test new innovations does not happen because someone at the top sends out a decree. It takes looking at the readiness of the organization for change and then creating a holistic approach that includes everyone in the organization. The literature that follows will be an important resource to any organization wanting to embrace a culture change.

Implementing change in any organization is a difficult task. One basic problem is plain and simple inertia. Individuals do not like change. They are much more comfortable with the status quo (Samuelson & Zeckhauser, 1988).

Many organizations, including police agencies, do not often consider change until there is a scandal or crisis. Innes (2013) observed that "quite possibly the key driver of reform and innovation in policing has been crisis and scandal. High profile visible failures have been a potent trigger for inducing change" (p. 21). For instance, in the 1960's the concept of community policing arose after the race riots. The premise that more police officers and better police-citizen interactions would reduce crime was embraced for almost thirty years (Sherman, 2013). Could it be, however, that an agency's resistance to change is to blame for the scandal or crisis (Innes, 2013)?

Let us look at the current budget crisis faced by many police agencies, as an example. Could a police culture regimented in the status quo actually contribute to the budget crisis by not being open to change? For instance, are there ways to improve police services while reducing costs? Is it possible that police officers can be more effective and skilled in dealing with crime and disorder (Innes, 2013)?

Before an agency can even answer such questions, there needs to be a culture change that is open to new innovations. This is an evidence-based culture that supports the implementation of experiments to assess the effectiveness of new innovations. This is a huge undertaking as it requires changing the culture of the agency. The literature that follows will help an organization understand what is involved in changing the culture of an organization.

An important place to start when preparing any organization for such a change is to first determine its readiness for change. The following summary of the "Stages of Community Readiness" is an important source for assessing the readiness of any organization for change (Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000, p. 297-300; Fixen, Naoom, Blase, Friedman, & Wallace, 2005, p. 10).

#### **Stages of Community Readiness**

### Preamble

- No Awareness No problem here.
- Denial A few recognize a problem but do not think there is a solution.
- Vague awareness Maybe we should do something?
- Preplanning We've got a problem. Leaders emerge.
- Preparation Active planning.
- Initiation Efforts are justified. Few problems at this stage.
- Stabilization Plan is in action (Edwards et al., 2000, p. 297-300; Fixen et al., 2005, p.

10).

By reviewing these stages, a police agency can assess the readiness of its command staff and officers to move towards evidence-based policing.

When considering ways to increase readiness, an excellent source to study is "The 8-Step Process for Leading Change" ("The 8-Step Process," n.d., p.1; Kotter, 2014, p. 1). For instance, "Step 1, Establishing a Sense of Urgency" ("The 8-Step Process," n.d., p.1; Kotter, 2014, p. 1) is an important step to help an organization progress through the first three stages: no awareness, denial, and vague awareness found in the "Stages of Community Readiness" (Edwards et al., 2000, p. 298-299; Fixen et al., 2005, p. 10). The other seven steps are equally as important as a holistic guideline for implementing a culture change, preparing an implementation strategy for an experiment, and integrating the tested innovation into an organization.

The table that follows gives a brief description of the eight steps. Kotter's (2014) extensive research has suggested "that 70% of all major change efforts in organizations fail…because organizations often do not take the holistic approach required to see the change through" (p. 1).

Steps for Change	Summary Statement	Guidelines for Change
"Step 1: Creating a Sense of Urgency"	Don't underestimate how hard it is to move an organization out of its comfort zone.	"Leaders who know what they are doing will 'aim for the heart.' They will connect to the deepest values of their people and inspire them to greatness. They will make the business case come alive with human experience, engage the senses, create messages that are simple and imaginative, and call people to aspire" ("The 8-Step Process," n.d., p. 1).
"Step 2: Creating the Guiding Coalition"	Gather a group of people together who can inspire and manage the change.	<ul> <li>Coalition guidelines:</li> <li>Include people who have enough authority to oversee the implementation</li> <li>Be sure the members are respected and can garner support within the organization</li> <li>Have enough key players so that those left out cannot block the progress</li> <li>Include those who represent different points of view</li> </ul>
"Step 3: Developing a Change Vision"	This is more effective than a mandate	<ul> <li>A change vision should:</li> <li>Paint a clear picture of the future</li> <li>Let the stakeholders see long-term benefits</li> <li>Show that the change is realistic and the goals are attainable</li> <li>Set a clear vision to guide decisions</li> <li>Not be set in stone. When a change is needed along the way, individual ideas should be encouraged and given serious consideration.</li> <li>Be easily and quickly explained</li> </ul>
"Step 4: Communicating the Vision for Buy-in"	Make communicating the progress of the implementation an everyday event	<ul> <li>Include updates in weekly emails</li> <li>Make quick presentations in meetings</li> <li>Include updates in newsletters</li> <li>Periodically host a forum where progress can be quickly explained and ideas for improvement can be sought</li> </ul>
"Step 5: Empowering Broad-based Action"	<ul> <li>Pay attention to those who could derail the implementation</li> <li>Be sure the change vision is interwoven into the agency</li> </ul>	Include in the implementation plan a way to get feedback from stakeholders and others like those in IT so concerns can be quickly met. Move to incorporate the change vision in performance evaluations and incentives such as promotions
"Step 6: Generating Short-term Wins"	Short-term successes are a key to sustaining the implementation	Identify ways to achieve short-term successes and communicate them throughout the organization
"Step 7: Don't Let Up"	Keep the change coming	To fully integrate an evidence-based culture, one successfully implemented experiment or change is only the start. Keep making changes and implementing new experiments to test new innovations so the tendency to revert back to the status quo is avoided.
"Step 8: Make it Stick" ("The 8-Step Process," n.d., p. 1-5)	Make sure the culture change infiltrates the organization	<ul> <li>Promote those who embrace the change</li> <li>Be sure new hires at all levels understand and embrace the new culture</li> <li>Be sure the majority of the organization embrace the change</li> </ul>

Table 1.	The 8-Ste	p Process fo	or Leadin	g Change	("The 8-Step	Process,	" n.d.; Kotter,	2014)
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In summary, this thesis will show that there are many preliminary steps to implementing a BWV camera experiment in a police agency. The first step is changing a police organization to an evidence-based culture. This process of change will not be embraced unless those preparing the implementation plan first start by determining the readiness of the agency and then proceed with a holistic approach. There will be many references to this section throughout this thesis which will show the application of the principles presented in this section.

### Literature on Implementing a BWV Camera Experiment

As the last section provided global literature on implementing a culture change within an organization; this section will give a brief review of the implementation strategy and research methods of a BWV camera randomized controlled trial. This is the only known literature of its kind.

In 2012, Chief Tony Farrar, in conjunction with the University of Cambridge, conducted a BWV camera experiment at the Rialto, California Police Department. This literature review will show the importance of implementing an evidence-based culture to support the body camera experiment. This will be followed Farrar's implementation strategy and research methods for the RCT (Farrar, 2012).

Chief Tony Farrar's RCT was conducted in Rialto, California. The Rialto Police Department (RPD) serves approximately 100,000 residents with 115 sworn police officers in an area covering 28.5 miles (Farrar, 2012, p.30). This police department was almost absorbed by the local sheriff's department in 2005 because the City Council believed the department was suffering from a "lack of team building, interpersonal relationships, and most of all, trust in the chief of police" (Farrar, 2012, p. 46). The autocratic leadership style of the then current chief had led to disarray. "Response times to calls were up, crime was up, selfinitiated activity was down, and employees from command staff to line officers had little faith in the chief" (Farrar, 2012, p. 46). With a department already willing to accept change, Chief Farrar's own transformational leadership style opened the way for the acceptance of an evidence-based policing environment. This transition did not happen overnight. Chief Farrar noted, "...leadership begins by establishing credibility by not only leading change, but becoming a credible example to those you lead. Also, incremental steps were taken to create trust, and as we know in law enforcement, credibility and trust can either make or break you as a leader" (Farrar, 2012, p. 56).

Chief Farrar's first incremental step in change was inspired by the best-selling book *Good to Great*, by James C. Collins (Collins, 2001). Collin's Level 5 Leadership has five characteristics: "the self-confidence to set up your successors for success, being humble, having unwavering resolve, workmanlike diligence, and giving credit to others for their successes while taking full responsibility for poor results" (Farrar, 2012, p. 56). His second step included creating an "Omega Dashboard Project" (Farrar, 2012, p. 56) which provided crime analysis data at an officer's fingertips. In addition, grant money was secured to hire "one full-time crime analyst to help craft new evidence-based strategies and evaluate existing ones" (Farrar, 2012, p. 56). The final step dramatically showed Chief Farrar's commitment to evidence-based policing when he attended the Master's in Applied Criminology and Police Management Course at the University of Cambridge. Chief Farrar said, "Leadership must show the organization there is a place for research, and that this research can help them do their jobs better than before" (Farrar, 2012, p. 64). With this in mind, Chief Farrar partnered with TASER International and the University of Cambridge to oversee the first known BWV camera randomized controlled trial in a police agency.

The first major obstacle in Chief Farrar's implementation strategy was funding. The economic downturn meant that there would not be funds available through his agency. Chief

Farrar obtained funding through the "Justice Assistance Grant Program" (Farrar, 2012, p. 65) and the city council approved the expenditure of these funds for the experiment.

The next step was deciding how to collect and analyze the data. Chief Farrar formed a data analysis team to "ensure the quality, accuracy, timeliness and security of the data necessary for the RCT" (Farrar, 2012, p. 67).

Chief Farrar's implementation strategy included a four-week testing period with the cameras to ensure the equipment was working properly and to ensure officers were adequately trained to operate the cameras. The experiment began six weeks after the targeted start date. Farrar noted that "one thing is constant, change is not easy and brings forth many challenges" (Farrar, 2012, p. 69). Chief Farrar summarized the implementation of his RCT. "Transformation occurs as a result of a well-orchestrated and well-led change strategy and transition plan....The implementation of any significant change process usually succeeds or fails because of the leadership of that change process" (Farrar, 2012, p. 70).

Chief Farrar's RCT is the first of its kind to test the effectiveness of BWV cameras in reducing police use of force and citizens' complaints. It is a valuable resource for those wanting to implement a RCT. As I prepared an implementation plan for my BWV camera experiment, I relied heavily on Chief Farrar's thesis even though our experiences were quite different.

As chief of his department, Tony Farrar worked with a command staff and officers who were wanting to please him. He was in a position of authority and was able to give direct orders which were carried out by his command staff. As an officer, my experience was quite different. My preparation included extra implementation steps requisite for someone at the rank of officer. However, regardless of rank, our research methodology is identical and our department size and city demographics, which follows, are very similar, making Ventura an ideal setting to replicate part of this experiment. Ventura, California is a coastal city approximately 70 miles north of Los Angeles and 115 miles north of Rialto California. Ventura covers 21.7 square miles and has a population of 106,433 ("United States Census Bureau," n.d., People Quick Facts 1). The Ventura Police Department is a mid-sized police department with 172 employees, of which 127 are sworn officers and 42 are civilians. There are 54 officers assigned to the patrol division ("About the VPD," n.d., p. 1).

### Conclusion

In conclusion, this chapter has provided valuable information on implementing change. In the first section, the review of global literature introduced the "Stages of Community Readiness" (Edwards et al., 2000; Fixen et al., 2005) and Kotter's "8 Step Process for Leading Change" (Kotter, 2014; "The 8-Step Process," n.d.). Both of these sources will be referenced in later chapters as they provide a valuable guideline in an implementation strategy.

The last section reviewed the only known literature on a BWV camera randomized controlled trial. Chief Farrar's thesis provides valuable guidance to those preparing to embrace a culture change with a police agency. His transformational leadership style was key in driving this change in his department. The review also highlighted important information agencies can use when preparing a camera experiment.

### **Chapter Three: Research Question and the Gap in Implementation Literature**

The direction for this thesis comes from the following research question.

What are the lessons learned from implementing a body-worn video camera randomized controlled trial in a police organization at the rank of officer?

In this chapter, I will discuss how I have taken the lessons I learned from conducting a RCT at the rank of officer and created a comprehensive guide for a police agency wanting to test BWV cameras. The evidence that has come from my experiences will fill a large gap in available literature on how to first implement an evidence-based culture change and then design an experiment to test the effectiveness of BWV cameras.

As seen in Chapter Two, there is an array of global literature on implementing change within an organization but limited literature on implementing change within a police agency. This thesis is written to fill this gap. The evidence on implementation that I will present comes from my studies of evidence-based policing at the University of Cambridge and the application of this knowledge at VPD.

As a police officer, I have played an active part in the department's transition to evidence-based policing being able to provide specific knowledge from my studies. In addition, I had the opportunity to design and implement a BWV camera randomized controlled trial with the assistance of Barak Ariel Ph.D. from University of Cambridge. Based on my experience, I will present evidence on implementation to help guide other police agencies in creating a culture change and implementing the testing of innovations. This will help fill gaps in existing literature in the following areas:

- evidence on the difference between a police chief and an officer implementing an experiment,
- evidence on implementing a culture change within a police agency,
- evidence on implementing a BWV camera randomized controlled trial, and
- evidence on tracking data to sustain the experiment and preserve the integrity of the data by tracking compliance.

Each of these areas will be explained in further detail in this chapter.

## **Evidence: Who Develops an Implementation Plan**

When Chief Farrar developed the implementation plan and oversaw the BWV camera experiment, he was a student at the University of Cambridge studying evidence-based policing. From studying current literature, he knew the need for an evidence-based culture within an organization before new innovations can be tested. He developed the implementation plan and oversaw the BWV camera experiment as Chief of the Rialto Police Department. Most of what he was able to accomplish was possible because he was able to delegate many responsibilities to his executive staff and his crime analysis unit. As the department head, Chief Farrar had the ability to assign as many people as he felt necessary to implement the department's BWV camera experiment (Farrar, 2012).

This thesis will show how a person at the rank of officer can develop an implementation plan and oversee a BWV camera experiment in a police agency. It will show that there may be advantages to an officer conducting such an experiment compared to a police chief. This is a ground breaking experiment, as there is currently no known literature relating to an officer implementing a body camera experiment. This will be an important contribution to the literature for those deciding who should lead a BWV camera experiment.

## **Evidence: Implementing an Evidence-Based Culture Change**

This thesis will make a significant contribution to the literature on BWV cameras by presenting a thematic guide to implementing an evidence-based culture change. There is no known literature of its kind. The importance of a thematic guide to implementation is that those who follow will have an extensive guide, presented by topic, to help them create an evidence-based policing culture within their agency. This will be an important contribution to the literature on implementing an evidence-based culture change.

# **Evidence: Implementing a BWV Camera Randomized Controlled Trial**

This thesis will make an important contribution to literature relating to the research design of a BWV camera randomized controlled trial. This will include the research questions for the BWV camera experiment and literature to validate the testing of the cameras. Other topics will include the need for a Level 5 RCT and statistical power to show causal effects of the cameras. This will be an important contribution to the literature on implementing a BWV camera randomized controlled trial.

#### **Evidence: Tracking Data to Sustain the Experiment**

This thesis will make another contribution to literature relating to the research design of a BWV camera randomized controlled trial. Tracking compliance is a critical step in sustaining the viability of an experiment. This thesis will show how VPD tracked compliance and how interventions improved the compliance rate.

## Conclusion

With only one known BWV camera experiment to date, there are many gaps in the literature for those who want to implement a BWV camera experiment in their police agency. This thesis will add valuable literature for those considering who should prepare the implementation plan and oversee the experiment by comparing the experiences of a police chief and an officer. It will also provide an extensive thematic guide presented by topic, for those implementing an evidence-based culture change and designing a BWV camera experiment. In addition, evidence of the importance of tracking compliance will be presented.

#### **Chapter Four: Implementing an Evidence-Based Culture Change**

The great majority of literature on implementation "takes us up to the point of deciding to adopt an innovation and says nothing about what to do next to implement that innovation with fidelity" (Fixen et al., 2005, p. 16). This thesis takes us beyond the point of deciding to adopt an innovation and provides a thematic implementation guide for creating an evidence-based police culture change that will embrace experimentation of new innovations. The evidence for this guide comes from my experience in helping VPD transition to an evidence-based culture. This evidence will include:

- the need for a transformational leader with a resilient commitment to problem solving,
- the need for a pracademic who has the expertise to prepare the implementation strategy,
- the need for a guiding coalition to help lead the evidence-based culture change,
- the need to create a sense of urgency for change among stakeholders, and
- the need to create a change vision to solicit buy-in among all stakeholders.

This will be followed by a discussion on the need to drive the evidence-base philosophy deep within the organization and a potential obstacle.

My hope is that the evidence presented on the themes in this chapter will provide a valuable guide for those wanting to create an evidence-based culture within their agency that will support the experimentation of new innovations. I also believe many of the themes in the chapter can be generalized for other experiments.

### **Role of a Transformational Leader and a Pracademic**

**Transformational leadership.** Officers tend to use their years on the streets and personal observations to justify the way they patrol and attempt to reduce crime in their particular beat. Officers tend to use their intuitive judgment based on previously accepted ideas, theories, and practices. In order to move a police department from business as usual to

a department that will be open to test and try new theories to improve police effectiveness requires a transformational leader. A transformational leader must articulate their values and the values of the organization, demonstrate a resilient commitment to problem-solving and make changes to better the relationship between managers and the rank and file (Farrar, 2012, p. 49; Neyroud, 2011, p. 351).

This transformational leader will be most effective if the whole department becomes disciples of evidence-based policing. A plan to accomplish this could begin with police managers studying evidence-based policing so they will have a comprehensive belief and understanding of its principles. Police managers can then work to educate and engrain the principles of evidence-based policing throughout the police agency.

Once the principles of evidence-based policing are engrained in the leadership of a police organization, they will evaluate the "quality of evidence" (Kahneman 2011, p.92) before making implementation plans to test a new innovation. In turn, the officers who are converted to the philosophy of evidence-based policing will have more confidence in experimenting with new innovations knowing that evidence, not intuition, will be the deciding factor. The outcomes will be that officers could put more energy and passion behind their crime-fighting approaches and techniques.

At VPD, Chief Corney wanted to conduct a BWV camera experiment using an evidence-based protocol to see if the technology was worth the investment. Recognizing the department did not have enough knowledge to integrate evidence-based policing, he sought ways to facilitate the culture change. What he needed at this time was a pracademic. In this scenario, the term pracademic is an active police officer who is also a student of evidencebased policing.

**Pracademics in law enforcement**. The term pracademic has been used before in professions including politics, business administration, and in education to suggest the need

for practitioners to be merged into colleges to offer insight and real world experience. In this section, I will argue the case and provide a definition for pracademics within law enforcement. This inverted look and case for pracademics will offer evidence which suggests that pracademics offer police agencies the missing link (Nalbandian, 1994; Morreale & McCabe, 2012; "Pracademic," 2013).

By my definition, law enforcement pracademics are active police officers who have been educated by academics in the field of evidence-based policing and who can help implement proven crime reduction methods within police organizations.

While it is widely known "that major gaps exist between what is known as effective practices (i.e., theory and science) and what is actually done (i.e., policy and practice)" (Fixen et al., 2005, p. 2), pracademics aim to fuse the two worlds together. Without a pracademic, the gulf between practitioners (law enforcement) and academics (criminologists) limits both groups in their ability to reduce crime. Pracademics are in a unique position and have the ability to combine both worlds which could produce many positive criminal justice outcomes.

To demonstrate, criminologists are consistently conducting research looking into existing police practices and have been able to produce valuable research about what police practices are empirically effective and which police practices are verifiably ineffective. An example of such valuable research can be found in the research report amply titled, "Preventing Crime: What Works, What Doesn't, and What's Promising" (Sherman et al., 1998). This report was published due to a congressionally mandated evaluation of state and local crime prevention programs and funded by the U.S. Department of Justice. This work produced a comprehensive report showing which police programs are empirically effective, which programs do not work and which programs show promise (Sherman, 1998).

Unfortunately, most law enforcement leaders have never heard of these experiments; therefore, they do not know to incorporate the findings in their police organization. It

appears the majority of law enforcement agencies are unwilling to support and sustain a culture lead by evidence. This could be derived from overconfident police managers who either believe they already know how to solve their own problems or the cost is not worth the investment. These types of police departments cannot justify spending extra money, especially in a state of austerity.

What generally happens is that police managers stay with what they know. These type of police managers continue to address new problems that arise in their jurisdiction by implementing programs based on intuitive-minded solutions instead of verifiable means of scientific experimentation.

This gap has created the need for a university with enough academic credibility throughout the world to bind the two worlds together. A university that has been able to nurture some of the greatest minds in the last 800 years and still able to set the pace for other academic institutions to follow.

**Pracademics and the University of Cambridge.** The University of Cambridge is facilitating the pracademic movement. The Institute of Criminology at the University of Cambridge is enrolling senior police professionals into their master's degree program which, in turn, is producing experimental police research within the walls of police departments all around the world.

During the second year, master's degree students start drafting their thesis by identifying a problem within their police agency or within policing in general. The student designs a research proposal around the question(s) they intend to answer. Through their studies and research, students learn the importance of evidence-based policing and how to conduct experiments in such a way as to obtain verifiable results. Some of the theses have shown remarkable research on police practices such as hotspot policing, solvability factors and property crimes. Most of the evidence gathered from these theses can be universally applied across law enforcement agencies to increase their efficiency and maximize their resources.

The concepts of evidence-based policing, taught at the University of Cambridge and learned by police practitioners, are best set in motion by these pracademics. Evidence of this rests in the Rialto experiment. Chief Tony Farrar was a student at the University of Cambridge when he implemented a BWV camera randomized controlled trial. He worked closely with Dr. Barak Ariel and other criminologists at the University to develop the first known BWV camera prototype.

# **Preparing for Change**

I recommend that a police agency wanting to implement evidence-based policing first study the "Stages of Community Readiness" discussed in the Literature Review (Edwards et al., 2000, p. 298-300; Fixen et al., 2005, p. 10). When we implemented Ventura's BWV camera experiment, we did not consider this literature which hindered our ability to smoothly transition to a BWV camera experiment. Now looking back at the Stages of Readiness, we were probably at the stage of "Vague Awareness." By not understanding the Stages of Readiness, we did not smoothly transition from "vague awareness" to a "preplanning phase" with open communication. We skipped this step and it hurt us in the long run as we jumped into "active planning" without laying a proper foundation (Edwards et al., 2000, p. 298-300; Fixen et al., 2005, p. 10). This caused several contamination issues, such as officers not following the RCT protocol which is further discussed in Chapter Six.

I also recommend studying Kotter's (2014) "The 8-Step Process for Leading Change" presented in the Literature Review (p. 1). I highly recommend the consideration of all eight steps in future implementation strategies. One of the eight steps is creating a guiding coalition with enough power to help foster a culture change ("The 8-Step Process," n.d.;

Kotter, 2014). A transformational leader and a pracademic simply cannot foster such a change.

Creating a guiding coalition proved to be a critical step to get the buy-in necessary for an evidence-based culture change at VPD. An Evidence-Based Policing Committee was created to lead the change and encourage the department to work as a team. The committee includes one assistant chief, one commander, two sergeants, two corporals, four officers, and our crime analyst officer. I am one of the officers who serves on the committee.

Chief Corney sent the supervisors of the committee to an evidence-based policing conference to gain more understanding of evidence-based policing so they could educate the rest of the committee. This committee was tasked with laying the evidence-based policing cornerstone at VPD by doing the following:

- attend and teach evidence-based policing at all patrol briefings,
- drive the idea of the need to transition to BWV cameras,
- identify foreseeable problems,
- provide an ongoing realistic assessment of operations, plan for anticipated failures, address how to overcome failed plans, and
- be an available resource to front-line officers.

Members of the Evidence-Based Policing Committee went to all patrol briefings and began introducing evidence-based policing practices, including the definition, some research and how we planned on transitioning the department. One thing we neglected to do well was engage our patrol officers in a discussion about evidence-based policing and the experiment. We neglected to engage officers in an open dialogue about the ramifications of the cameras. We learned that "Simply providing the findings is not enough" (Nutley, Walter, & Davis, 2007, p. 312). We did not enable a debate about the implications which, looking back, would have provided more engagement and understanding of what was happening. It would have also provided a way for officers to openly discuss and give feedback to the committee.

### **Creating a Sense of Urgency**

One of the first steps we took in our active planning was to create a "Sense of Urgency" ("The 8-Step Process," n.d., p.1; Kotter, 2014, p. 1). To create true urgency towards embracing an evidence-based policing culture change, it is imperative to "aim for the heart" ("The 8-Step Process," n.d., p.1; Kotter, 2014, p. 1) by helping the organization see the need for change. Leaders must create urgency at each rank until the general population is convinced that an evidence-based change is eminently needed.

One way we created urgency was by pulling our raw data and looking at our numbers. We had 43 citizens' complaints and 99 use-of-force incidents in 2013. Our district attorney's office immediately rejected over 13% of our total cases which we submitted to them to be filed. Over 30 % of our sex crime cases were rejected and over 18% of our narcotics cases were rejected in 2013.

These numbers seemed to be fairly consistent for the past years despite many different ideas being implemented. We seemed to be creating a "false urgency" where our officers were busy working but their efforts produced the same results year after year. Working without results can create complacency and that why it is important to create true urgency where officers will be focused on making real progress and avoid accepting an "everything is fine" attitude.

We also looked to see what the evidence said about BWV cameras to determine if they have been effective at reducing citizens' complaints and police use-of-force instances. The dramatic empirical evidence on BWV cameras produced in the Rialto experiment and reviewed in the Literature Review provided VPD with convincing evidence to move forward with implementing a BWV camera experiment.

#### Creating a Change Vision among the Stakeholders

When creating an evidence-based policing culture within an agency, there are many stakeholders. In the initial stages of change, the stakeholders are within the agency but when an experiment such as the BWV camera experiment is planned, there are many stakeholders outside the agency to also consider. Creating a change vision to solicit buy-in among all stakeholders should be an important step in the implementation process. This will strengthen the foundation of the transition process so it can sustain its momentum until it is integrated into the DNA of the police organization.

I recommend that an agency wanting to create a change vision among stakeholders refer back to the "Stages of Community Readiness" (Edwards et al., 2000, p. 297-300; (Fixen et al., 2005, p. 10) outlined in the Literature Review to first accurately assess the current stage of readiness of each stakeholder. This will aid in their goal to increase readiness. I also recommend a review of Kotter's (2014) Step 4 outlined in the Literature Review to obtain buy-in from each stakeholder (p. 1).

**False dichotomy of evidence-based police management.** Police managers need to fully embrace the evidence-based culture change during the transition process as they have a great deal of influence in the police organization. The fallacy of evidence-based policing causing an apparently incompatible division with opposing principles is simply false. Nevertheless, some police managers might resist changing to an evidence-based practice due to the threat of losing "personal freedom" to manage as they see fit (Rousseau, 2006, p. 261). Police managers, much like medical doctors, can feel a loss of creativity and autonomy when relinquishing their particular style or art of managing when transitioning to evidence-based

practices. This was more thoroughly examined by some managers in the medical profession in an article appropriately titled "False Dichotomies: EBM, Clinical Freedom and the Art of Medicine" (Parker, 2005). The truth is that evidence-based management enables "higherquality managerial decisions that are better implemented and it yields outcomes more in line with organizational goals" (Rousseau, 2006, p. 267).

**Training front-line officers.** We developed a training protocol specifically for frontline officers to increase their desirability to participate in the experiment. The training included education on why evidence-based policing was relevant in today's police department, an explanation of the BWV policy, and their expectations. It also included a demonstration of how to use the cameras and how to manage their EVIDENCE.com account which provides storage of all of their video files. In addition, officers were trained and instructed about the research design including the random assignment of the cameras.

Many officers felt the cameras were a tool that police management would use to micro-manage their performance and hand out disciple for policy violations. This fear caused the association to include a "No-fishing" clause in VPD's BWV policy which prevented supervisors from looking into individual officer's video files in an attempt to locate policy violations.

With this in mind, VPD made it their policy that officers should make every reasonable attempt to turn on their cameras during law enforcement contacts but gave specific instructions that they should turn their cameras off if they are requested to do so by a victim reporting a crime. It should be noted that suspects of crime, however, are not afforded the same option.

**District Attorney.** The district attorney's office is an important stakeholder when an agency is preparing to implement BWV cameras. It is important to start early to garner support from first the district attorney and then the executive team. In addition, the police
agency should initiate a plan to work with the district attorney's office to put into place a BWV policy that would instruct officers when it was appropriate to use the device and when the cameras should be turned off, for instance, while the officer is in a hospital. It is also important to explain the research design of the randomized controlled trial so they can understand the random assignment of the cameras. This is particularly important for the district attorney's office so they will not be questioning why some case files had BWV evidence.

During the preplanning phases of our BWV experiment, we met with the executive team at our prosecutor's office informing them of our experiment and collaborated to find the best and most efficient avenue to get video evidence captured by body cameras to their office. I will briefly include our current method of how we provide BWV file evidence to the district attorney's office in Chapter Five.

This is the end of the evidence I will present on implementing a culture change based on my BWV camera experiment to date. Because our experiment is in the early phases, there is much left to learn about integrating evidence-based policing. I will make recommendations in the discussion section below on more steps to follow to integrate the change. I will also make a recommendation about integrating the culture change by realigning incentives and performance appraisals to include the embracing of evidence-based policing. This will be followed by a discussion of a potential obstacle that could occur if an agency wants to send a member of the department to the University of Cambridge to study evidence-based policing. I will make a policy recommendation to avoid this potential problem.

#### Discussion

**Integrating a culture change.** Our BWV camera experiment is in its sixth month of testing. There is still much to do to drive the change to evidence deep within the organization. We will need to continue to show the department the importance of testing the cameras. We will need to continue to show them results from the experiment in the months to following. We will need to continually reinforce the importance of collecting data with fidelity to make decisions. Kotter's Step 7 is, "Don't Let Up" ("The 8-Step Process," n.d., p. 4). We need to keep the change coming. When this experiment is over, we need to keep making changes and keep implementing new experiments to test new innovations.

Kotter's Step 8 is "Make it Stick" ("The 8-Step Process," n.d., p. 5). He emphasizes the importance of making sure the change infiltrates the organization. One powerful way to make evidence-based policing a part of the DNA of the department is to make it a part of the grading curriculum of the organization. Before the transition to evidence-based policing, police managers will only know what has been previously deemed as commendable behavior and will not understand the cultural shift until the chief empowers those who embrace the change. The chief can empower those officers by giving out commendations and promoting those officers who adopt, engage, and implement the philosophies encapsulated within evidence-based policing.

"Realigning incentives and performance appraisals" ("The 8-Step Process," n.d., p. 3) to encourage managers to engage in evidence-based practices could be a very valuable tool for the chief to deploy. This will persuade managers to engage in the philosophy because it is built into the cultural structure of the organization.

Police managers can engage in evidence-based policing by targeting crime problems and looking for interventions to implement which have been empirically shown to be effective. If policing strategies are operationalized with no supporting evidence, stakeholders including police officers and support staff might have less confidence in police mangers decisions. In contrast, when police operations are implemented based on "systematic causal knowledge," (Rousseau, 2006, p. 261) police managers can deliver the results promised to their stakeholders, (e.g., police officers, support staff, and community members) which can increase legitimacy within the organization.

In addition, this culture change and realignment of performance evaluations could increase the legitimacy within the walls of the organization and subsequently increase the credibility of police managers. Although I will not be able to thoroughly give justice to this topic in this thesis, departments would be wise to understand that organizational legitimacy is another product of evidence-based management" (Rouseeau 2006, p.251).

**BWV policy.** When drafting policy relating to our BWV camera experiment, it was important that we look at existing research surrounding the privacy rights of both officers and private citizens. The American Civil Liberties Union (ACLU) has offered recommendations for both officers and citizens regarding the importance of a strong policy to be in place before deploying BWV cameras.

In a report generated by the ACLU regarding the use of BWV cameras by police officers, they stated, "Cameras have the potential to be a win-win," for citizens and officers "but only if they are deployed within a framework of strong policy" (Stanley, 2013, p. 1). The ACLU has publically said that body mounted cameras could "protect" citizens against police misconduct and "protect" officers from false allegations (Stanley, 2013, p. 1).

Before any police agency implements BWV cameras, it is critical that they first incorporate a policy that protects their officers and the citizens while allowing officers to record the best, most accurate evidence, for criminal and/or civil cases. The BWV camera policy should balance the privacy rights of officers and private citizens.

## **Implementation Obstacle**

This chapter has presented potential problems that may be encountered by agencies choosing to send qualified officers or managers to the University of Cambridge. As Chief Corney prepared to embrace an evidence-based policing culture, he decided the department would benefit from an officer receiving an education in evidence-based policing from the Criminology Department at the University of Cambridge.

VPD created a University of Cambridge Police Executive Program Policy after I enrolled at the University to clarify many issues raised from sending an employee to such a program. The policy includes minimum requirements and a formal selection process. The policy states that the selected employee is responsible for paying all of the tuition but the department will cover all airfare and not require officers to use vacation time.

Based on this experience, I would recommend that an agency wanting to move forward to educate a pracademic at the University of Cambridge should organize an evidence-based policing committee to research the M.St in Applied Criminology and Police Management (Police Executive Programme) at the University of Cambridge. The following website will offer the research team an opportunity to familiarize themselves with the requirements, course work and cost of the program,

### http://www.crim.cam.ac.uk/courses/police/prospective/.

The committee should then draft a written policy that covers minimum requirements for employees interviewing for the program. The following selection process should be considered:

- written test,
- oral examination, and
- academic qualifications.

The policy should also clearly address what costs the department will cover and what costs the employee will cover.

# Conclusion

In conclusion, this chapter provided a thematic approach to implementing a BWV camera experiment. We were able to show the importance of having a transformational leader within a police organization. A transformational leader provides a path for a pracademic to help change the culture of a police organization to embrace evidence-based policing. As with all pioneering efforts, challenges will be encountered and a plan to overcome those obstacles should be formally addressed via department policy.

This chapter also discussed preparing an agency for change. This included determining an agency's stage of readiness for change and steps to take to create the change. These steps included creating a guiding coalition for an evidence-based culture change, creating urgency, creating a change vision, and driving the evidence-based culture deep within the organization by incentivizing its application.

The creation and training of VPD's Evidence-Based Policing Committee on the importance of an evidence culture change was discussed, including their role of spreading this knowledge throughout the department. A sense of urgency was created by presenting the data on use of force and citizens' complaints showing a need to improve performance.

This chapter also explained how a change vision among stakeholders was obtained. Managers, officers and members of the district attorney's officer were shown the benefits of implementing a BWV camera experiment. In specific, the benefits of BWV were explained to each group.

This chapter discussed future implementation steps for driving the culture change deep within the organization. This included continuing with other experiments and aligning performance evaluations to include the embracing of evidence policing. Lastly there was a recommendation for a policy to be in place for the selection process and commitment of both the agency and the member to attend the University of Cambridge.

#### **Chapter Five: Targeting and Testing for a BWV Camera Experiment**

As I discuss implementing a BWV camera experiment, I will rely on Sherman's Triple T guide to validate the steps necessary to test an innovation (Sherman, 2013). The Ts include Targeting, Testing and Tracking. In this chapter, I will discuss the evidence from my BWV camera experiment that shows the importance of using targeting as the first step in the implementation process. It is important to first determine the problems that need to be targeted and then determine the best intervention to scientifically test to address these problems. Once the intervention is identified, then research questions or hypotheses can be identified to lead the experiment. The next step is to validate the testing of the intervention with theory. This is followed by the development of a research strategy to scientifically test the new intervention based on the research questions determined during targeting. This chapter will apply targeting and testing from the Triple T guide, followed by tracking in Chapter Six (Sherman, 2013).

## **Targeting Problems**

After a beginning move to incorporate evidence-based policing, the Chief of VPD wanted to target the department's problems with use of force and citizens' complaints. Data was gathered and the results showed that over many years the number of use-of-force incidents and citizens' complaints did not significantly change even though various strategies were used. He decided to scientifically test BWV cameras to see if they would significantly reduce the number of use-of-force incidents and citizens' complaints. In addition, he decided to test to see if BWV would affect prosecution outcomes.

Based on the department's targeted problems, the following research questions were prepared to lead the experiment.

- Does the use of BWV cameras decrease the number of police use-of-force instances? (Are the findings from the Rialto study on use of force extendable to other jurisdictions in California, namely Ventura?)
- Does the use of BWV cameras decrease the number of citizens' complaints against response officers? (Are the findings from the Rialto study on citizens' complaints extendable to other jurisdictions in California, namely Ventura?)

The second part are research questions on the effect of body-worn video on prosecution outcomes. The questions are:

- When BWV evidence is presented with case filings, will there be fewer criminal cases rejected by the district attorney's office?
- When BWV evidence is presented with case filings, will there be an increase in early guilty pleas?
- When BWV evidence is presented with case filings, will conviction rates increase?

# Theories to Validate the Testing of BWV Cameras

Before designing and implementing a BWV camera experiment, theoretical literature must be found to validate the testing of BWV cameras. Research confirms that when people are aware that they are being observed, their thought processes change and they become selfaware (Chartrand & Bargh, 1999; Dzieweczynski, Eklund, & Rowland, 2006; Jones & Nisbett, 1971; Gervais & Norenzayan, 2012).

Considering experiments always need to be validated by theory, the following literature review will show how deterrence theory validates the use of body cameras in affecting the behavior of police officers and citizens. This theory will validate the testing of body cameras in reducing police use of force and citizens' complaints. The literature review will also show how prospect theory validates the testing of BWV in affecting prosecution outcomes. Considering the focus of my thesis is on implementation, I purposely do not dwell on these theories. This is not to imply that these theories do not deserve adequate address.

Deterrence theory validates the use of body cameras in affecting the behavior of police officers and citizens. Officers might be deterred from some incidents of use of force when they consider how the public and court may perceive the BWV of their actions. For citizens, BWV cameras could deterred them from breaking the law when they are aware their actions are being recorded. If the risk of being arrested and convicted increases because of BWV, the suspect might also place more weight on the anticipated punishment which could act as a crime deterrent (Paternoster, Brame, Bachman, & Sherman, 1997, p. 166). In this way, deterrence theory validates the testing of body cameras in reducing use of force and citizens' complaints.

These few examples not only show the potential of BWV cameras to deter behavior but they also show the potential of the cameras to increase public legitimacy. Police legitimacy from the public is unavoidably conditional. It can be wasted until there is disorder or it can be nourished until the public has a "positive recognition of the moral right" (Tankebe, 2013, Slide 13) of law enforcement to exercise power. Police can impose coercive powers on citizens by doing such things as handcuffing, yelling and commanding arrest (Tyler, 2011). All these acts have minimal impact on a person's willingness to comply with law enforcement. But, if an officer takes the time to communicate and explain to a citizen that he could be arrested, the citizen is more willing to comply with the police officer (Tyler, 2011). If a simple explanation of each vindication increases a citizen's cooperation, how much more useful would it be to use a BWV camera which could capture an unbiased perspective? Playing the video back to the suspect being arrested could provide a balanced perspective of the incident and increase the suspect's recognition of the police officer's right to exercise his legal powers (Tankebe 2013). The use of BWV cameras not only has the potential to minimize misperceptions by both the suspect and the officer but it has the potential to increase public legitimacy.

In addition to deterrence theory, prospect theory offers fundamentally sound roots for testing BWV cameras when evaluating the psychological effects BWV has on suspects confronted with court prosecution. As suspects enter the judicial process on U.S. soil, they are faced with two options. The defendant can either accept an early guilty plea at an Early Disposition Conference (EDC), where the prosecuting attorneys will offer a shorter prison sentence in exchange for an early guilty plea or the defendant has the option to take their case to a jury trial and risk facing a much longer prison sentence, if found guilty.

The gamble is too great for the majority of people who are naturally loss averse. When suspects are measuring the value of their freedom when faced with BWV evidence, they may begin to think about their personal outcomes in terms of gains and losses. The economically grounded prospect theory has shown that people are naturally loss averse when it comes to gambling their own money. What about gambling their freedom? I conjecture that the worth of one's freedoms has greater value than currency. In this way, prospect theory validates the testing of BWV to increase prosecution outcomes.

#### **Research Design to Test the Innovation**

Once an innovation has been validated by theory, the next important part of the implementation strategy is to decide what type of experiment will be conducted. The BWV camera experiment being conducted at VPD is a Level 5 Randomized Controlled Trial based on the Maryland Scale of Scientific Methods. The Maryland Scale is used to produce validity

in research results. This scale is defined with five levels of effectiveness with five being the highest level (Sherman et al., 1998).

A Level 5 RCT provides an ideal opportunity for researchers to test theories about prevention and causation of crime (Sherman, 2010). A Level 5 RCT on the Maryland Scale is the most conclusive and needs to include the following criteria:

- pre-test and test in order to compare before and after crime data,
- random assignment and analysis of comparable units,
- designated target beat and a controlled beat,
- multiple units used in the analysis, and
- specific evaluation period (Sherman et al., 1998, p. 5).

At the conclusion, researchers will be able to determine any causal effects by analysing the crime data from multiple units collected from the target beat and the comparison beat looking specifically at before and after data (Sherman et al., 1998).

**Description of the randomized controlled trial**. VPD has five patrol teams assigned to participate in the experiment. Two of these teams are assigned to work day shift, two teams are assigned to work night shift, and one patrol team is assigned to work a day shift, a mid-day shift, and a night shift each week. There are 14 patrol shifts per week and 42 sworn officers assigned to the experiment. An example of the random assignment is depicted below.

SHIFT	DAY	DATE	SCHEDULE
C Shifts	Monday	9/29/2014	Cameras On
A Shift	Tuesday	9/30/2014	No Cameras
C Shift	Tuesday	9/30/2014	Cameras On
A Shift	Wednesday	10/1/2014	No Cameras
C Shift	Wednesday	10/1/2014	No Cameras
A Shift	Thursday	10/2/2014	No Cameras
C Shifts	Thursday	10/2/2014	Cameras On
A Shift	Friday	10/3/2014	No Cameras
C Shift	Friday	10/3/2014	Cameras On
A Shift	Saturday	10/4/2014	Cameras On
C Shift	Saturday	10/4/2014	No Cameras
A Shift	Sunday	10/5/2014	No Cameras
C Shifts	Sunday	10/5/2014	Cameras On

 Table 2. VPD Randomization Schedule

The experimental model consists of a randomized assignment of patrol teams to either a controlled or experimental shift. The controlled shift is deployed as normal and is not assigned a body camera. In contrast, the experimental shift consists of a team of officers wearing TASER body cameras which record both audio and visual. The unit of analysis is patrol shifts.

The length of the RCT is 12 months to provide statistical strength and to account for seasonality and rare events that can potentially be affected by the use of cameras. During the year-long experiment, shifts are randomly assigned by Barak Ariel Ph.D. of the University of Cambridge in weekly consignments. The 14 shifts per week are randomly assigned for a period of 52 weeks. There will be a total of 364 experimental shifts and 364 controlled shifts for a grand total of 728 shifts during the 12-month experiment.

**Statistical power.** As previously discussed, Rialto's BWV experiment showed a significant reduction in the amount of police use-of-force incidents and citizens' complaints but stands alone as the only BWV experiment and therefore lacks the statistical strength provided by replication studies. Without a replication study, the results of the Rialto RCT

could just be due to chance (Tversky & Kahneman, 1971). The statistical power of the findings in VPD's replication study will be important because "…considerations of statistical power are of particular importance in the design of replication studies" (Tversky & Kahneman, 1971, p. 107

The VPD experiment will be comparing the mean from the controlled group with the mean from the experimental group in each research question to show causal relationship. To provide statistical power to this replication study, a t-test will be used. A t-test was chosen over other methods because it will allow us to compare the means of two groups (controlled and experimental). A t-test will allow us to assess whether or not the mean of the controlled group and the mean of the experimental group are statistically different from each other (Trochim, 2006).

I will use SPSS to help calculate a t-test comparing the mean number of complaints, use of force and prosecution outcomes collected from all spreadsheets. I will then be conducting an effect size analysis to see if there was a statistically significant difference of the experimental and controlled groups which could have meaningful practical application to law enforcement (Muller-Johnson, 2014).

Secondary data regarding VPD's police use of force and citizens' complaints from years 2011 to 2013 will also be provided. In addition, secondary data will be provided regarding the number of cases rejected by the district attorney's office in 2013. Even though secondary data cannot be used to show causal links, it will be used to show a more comprehensive picture and to increase internal validity.

By analyzing the data captured in relation to police use of force, citizens' complaints and prosecution outcomes over a 12-month period, the RCT will aim to show the causal effects of the use of BWV cameras. At the end of this time period, we will be able to determine if the collected data falsifies the null-hypothesis originally stated in the Rialto RCT in regard to the effects of body cameras on police use of force and citizens' complaints. Data will also be analyzed to answer the research questions about the effects of BWV on prosecution outcomes. This will include data which will aim to show if BWV decreases the number of cases rejected by the district attorney's office, increases early guilty pleas by defendants, and increases overall conviction rates.

**Description of VPD's research parameters.** The research parameters for use of force, citizens' complaints and arrests will follow.

*Use of force (controlled and experimental).* VPD describes use of force in Section 300.1.1 of the Ventura Police Department Policy Manual. Force is defined as, "The application of physical techniques or tactics, chemical agents or weapons to another person. It is not a use of force when a person allows him/herself to be searched, escorted, handcuffed or restrained" (Ventura Police Department Policy Manual 2012, p. 41).

VPD categorizes force and the type of force used in the following classifications:

• armed,	• electronic device,	• stun bag,
• baton,	• leg restraint,	• takedown,
• blood draw,	• lock,	• twist,
• carotid restraint,	• rear wrist lock,	• upper body controlled,
• chemical agent,	• rigid baton,	hold, and
		• other.

*Citizens' complaints (controlled and experimental)*. During this experiment, any citizen who wishes to make a complaint against an officer will have two options. In the first option, the citizen can fill out a complaint form which is given to the Professional Standards Unit who will be assigned to investigate the complaint. In the second option, a citizen can make a face-to-face complaint against an officer directly to a supervisor. All complaints from citizens, whether verbal or written, are given to the Professional Standards Unit for

investigation. VPD categorizes citizens' complaints on their reporting forms in the following classifications:

- discourtesy, improper tactics, unnecessary force, and
- driving, language, other.
- mistreatment, unbecoming conduct,

*Arrests (controlled and experimental).* Prosecution data will be tracked for all arrests made during the 12-month experiment. Arrests are qualified as any person charged with a criminal complaint by a Ventura Police Officer and either released, with a promise to appear in court, or booked into county jail.

Details of how the data will be tracked will be included in Chapter Six. At the end of the experiment on June 1, 2015, data will be analyzed comparing the prosecution data collected from the controlled group to the prosecution data collected from the experimental group. Based on the data analysis, answers to the three research questions regarding prosecution outcomes found in Chapter Three will be answered.

## Making the Camera Decision

Another important part of the research design needs to be the actual BWV camera decision. The evidence from VPD's experiment suggests that various body camera vendors should be contacted.

Each camera selected to be tested should be deployed to a pilot group of patrol officers who will rate the camera and associated storage in the following categories:

• battery life,

- low light technology,
- capability with other technologies such as smart phones,
- pre-event buffer, and
- quality of picture.

• design and weight,

In addition and maybe even more importantly, the following should be considered:

- ability to share and edit BWV files,
- chain of custody of video files,
- cloud-based storage,

• tracking, and

• security of storage,

• ability to share and edit BWV files.

VPD chose TASER Axon body cameras which are mounted on officers' chest area. The apparatus was chosen because it offers many valuable features including:

- 130% high definition wide-angle lens,
- 12 hour battery life,
- retina low light technology recording feature which allows better picture quality,
- weighs 3.5 oz.,
- ability to view recordings on smart phones, and
- 30 second pre-event buffer to pick up video footage 30 seconds before the officer officially starts recording.

## **IT Configuration Upgrade**

The evidence from VPD's experiment shows the importance of working with the IT department early in the implementation strategy. Video from BWV cameras is uploaded at the end of a shift by placing the camera in a docking station. We grossly underestimated the difficulties and cost of upgrading our current IT configuration to accommodate the BWV camera docking stations. Our assistant chief played a pivotal part to ensure the requisite IT support was met. He arranged several conference calls with City IT managers and TASER IT representatives to discuss what our capabilities and limitations were relating to bandwidth.

#### **BWV Files: Storage, Sharing and Retention**

The evidence from VPD's experiment shows that the storage of video files is an important consideration in the implementation strategy. After much research and consideration, VPD decided to store their video files with EVIDENCE.com which is a cloud-based storage component of TASER. EVIDENCE.com accounts for chain of custody, evidence compliance, and is auditable to ensure policy compliance. EVIDENCE.com offers beneficial capabilities that include:

- forensic fingerprints which uses industry standard SHA-1 hash function,
- before and after upload to ensure no changes occurred,
- full tamper-proof evidence audit records,
- video files cannot be edited or changed, even by account administrators, and
- deletion protection, even a remorse period to recover accidently deleted evidence files ("EVIDENCE.com Security," 2014).

Evidence from VPD's experiment also shows the importance of planning, in the implementation strategy, the protocol for providing BWV evidence to the prosecutor's office. In an effort to obtain the important goals of the experiment to increase our conviction rates and increase the speed of prosecution by providing our district attorney's office with the best possible evidence when criminal complaints are ready to be filed, the complaint is given to our court liaison officer. The court liaison officer has supervisor permission in EVIDENCE.com. With this permission level, the officer will then search for any video evidence related to the criminal complaint in EVIDENCE.com. If any video is located, the court liaison officer or their assistant will burn the video to a disc and attach it to the criminal complaint.

The evidence from VPD's experiment also shows the importance of creating policy regarding the retention of BWV files in the implementation strategy. There is a large cost

associated with video retention and cost of storage. The ACLU recommends that "Data should be retained no longer than necessary for the purpose for which it was collected" (Stanley, 2013, p. 3). The ACLU recommends that video files flagged as evidence, such as use of force and citizens' complaints, should be retained and be available for the community. They recommend that members of the community who have encounters with police should be given the department's website where the information about how long they have to file a complaint or request access to footage will be provided (Stanley, 2013). VPD currently deletes all video files after 30 days which have no evidentiary value.

#### **Discussion of how Cameras Work with EVIDENCE.com**

In this section of Chapter Five, I will provide information that I deem helpful in understanding a practical application of the how BWV cameras work with EVIDENCE.com.

**Day-to-day application of BWV cameras.** The following step by step account is written to allow the reader to understand, from a practical point of view, how officers use the cameras, track their video files, view and store their video recordings, and use EVIDENCE.com. This step by step account is designed to show police managers how this technology works from an operational stand point to help them prepare and embrace the transition to BWV cameras.

- The department's EVIDENCE.com administrator downloads the SYNC icon on all computers used by patrol officers. SYNC can be downloaded from the EVIDENCE.com website. SYNC will allow officers to assign their BWV cameras to their EVIDENCE.com account.
- 2. The department's administrator will "invite" all employees to sign up for their EVIDENCE.com account. This invitation is sent out via email.
- 3. The officer sets up an EVIDENCE.com account by following the email instructions from Evidence.com and selects a unique user name and password.
- The officer is assigned a BWV camera and assigns the camera to himself using SYNC by EVIDENCE.com.
- 5. The officer downloads the AXON MOBILE application to his smart phone.
- 6. The officer connects the BWV camera to his smart phone via Bluetooth.
- During the officer's shift, a video is recorded (e.g., a witness statement during a robbery).
- 8. The officer goes into the AXON MOBILE application on his smartphone, categorizes the video file as "evidence", inputs the report number into the "ID" field, and includes a title such as "interview with witness Jane Doe".
- The officer can now watch the incident on his smart phone. The officer can fast forward or rewind the incident and use the recording to write a more accurate police report.
- 10. The officer will go throughout his shift repeating the same steps.
- 11. At the conclusion of the officer's shift, he will dock the camera by inserting it into the docking station and all video files will automatically be uploaded to his particular EVIDENCE.com account. The docking station will also charge the camera while it is uploading so the battery is fully charged for the next shift.

Once the video is uploaded to the cloud, the officer can then view, send or edit the video file. The officer can even take a screen shot, for example, of a person the officer is attempting to identify for distribution. The original video cannot be changed. However, an officer can create and edit another version of the video file if, for example, the officer forgets to turn the video off at the end of the call for service and there exists hours of useless video. This may be suspicious to both the prosecutor and the defense attorney so they can still view the original file until they are satisfied that no additional video evidence exists. This will allow the edited version to be shown during the court process.

## Conclusion

Chapter Five has presented evidence from VPD's randomized controlled trial on targeting and testing BWV cameras. The evidence is presented in themes to provide other agencies a guide to creating an implementation strategy to test BWV cameras in their agency. Sherman's Triple T was the framework for this Chapter. The problems were targeted and the intervention was identified for testing. Research questions for VPD's experiment were identified and theories were presented to validate the testing of the cameras.

A Level 5 Randomized Controlled Trial was identified and a randomization strategy for VPD's experiment was presented. To validate the data that will be collected during the experiment, the statistical power elements were presented. This was followed by VPD's research parameters for use of force, citizens' complaints, and arrests.

Evidence was then presented on making the camera decision with recommendations on selecting the right camera, including the features that should be included. This was followed by evidence on the important decision of how to store video, how to provide video for prosecution, and retention issues. The discussion section followed with a practical view of the how BWV cameras work with EVIDENCE.com.

## **Chapter Six: Tracking Compliance**

"No matter what targets are selected for police resources, no matter how well the police methods are tested, the central management question will always be, what are police doing to accomplish our objectives, when, where, and with what apparent result" (Sherman, 2013, p. 11)?

This implementation thesis will demonstrate how a police agency can become more effective in conducting experiments by implementing tracking to preserve the integrity of the data. "There is little conceptual doubt that tracking is likely to make the police more effective" (Wain & Ariel, 2014, p. 5).

In the following section, I will show how VPD tracks data on use of force, citizens' complaints, and prosecution outcomes. I will also show the importance of tracking compliance with the randomization schedule to sustain the viability of the experiment.

## **Tracking the Intervention**

To track the intervention of BWV and its effects on citizens' complaints and use-offorce incidents, we are utilizing an already existing Access database on an internal drive.

Tracking citizens' complaints. Citizens' complaints are documented by supervisors in the Access database. Supervisors record the details of the complaint by answering questions on an electronic form. The report form has many fields important to the experiment to ensure the data is tracked with fidelity. Some of these fields include the following:

•	date,	•	type of complaint, and

• time.

- name of the officer,
- disposition of complaint ranging from no action to termination.

This information allows us to go into EVIDENCE.com to determine if a camera was used during the complainant's interaction with the officer.

**Tracking use of force.** Use-of-force incidents are documented by supervisors in the Access database. Supervisors record the details of the complaint by answering questions on an electronic form. The report form has many fields important to the experiment to ensure the data is tracked with fidelity. Some of these fields include the following:

- date, type of use of force,
- time,

- tracking, and
- name of officer, disposition of use-of-force incident ranging

from "within policy" to "termination".

This information allows us to go into EVIDENCE.com to determine if a camera was used during the use-of-force incident.

**Tracking prosecution outcomes.** To track the effects of BWV cameras on prosecution outcomes, an Excel spreadsheet was specifically designed for Ventura's BWV camera experiment. Considering the complexity of this first of its kind RCT and with much help, we wrote programing code into Excel which would automatically collect and track the data needed to analyze the effects of BWV on prosecution outcomes. The Excel code was designed to accurately collect, download, and track data to ensure internal validity for each arrest made by patrol officers participating in the experiment.

Data is collected internally from VPD's Record Management System which stores all arrest data and externally from EVIDENCE.com. Court information is downloaded from the publically accessed Ventura County Court Information website. The Ventura County Court Information website contains court docket information on all criminal defendants. The VPD's Excel spreadsheet is automatically populated with information from all three of these sources. Each arrest is one row on VPD's tracking spreadsheet and contains the following information:

- name of person arrested,
- birth date of person arrested,
- arresting officer's name,
- arresting officer's ID number,
- report number,
- date of arrest,
- case type, such as narcotics or domestic,
- body camera used (yes or no),
- court status, (e.g., convicted, pled guilty, or disposition date),
- hyperlink to the actual court document,
- length of case in days (calculated field from arrest date and disposition date).

A screen shot of VPD's prosecution outcome spreadsheet is displayed below.

1	Get new ca check state	ises and us for all			Last Update	6/26/14 8:43								
3	Arrest Date	Last Name	First Name	DOB	Camera	Report Number	Link	Arresting Officer Badge Number	Case Type	Status	Violation Date	Dispo Date	Length of Case in Days	
4	6/20/2014	Doe	John	1/1/1970	No	ARR14-002099	link	395	Domestic Viole	Convicted	6/20/2014	7/1/2014	11	PC273.5(
5	6/9/2014	Doe	John	1/2/1970	No	ARR14-006568	link	406	Property Crime	Convicted	6/21/2014	7/2/2014	11	PC530.5
6	5/29/2014	Doe	John	1/3/1970	No	ARR14-006587	link	403	Narcotics	Convicted	6/22/2014	7/3/2014	11	HS11364
7	5/29/2014	Doe	John	1/4/1970	No	ARR14-006587	link	403	Property Crime	Convicted	6/23/2014	7/4/2014	11	PC496
8	5/29/2014	Doe	John	1/5/1970	No	ARR14-006589	link	308	Property Crime	Convicted	6/24/2014	7/5/2014	11	HS11350
9	6/6/2014	Doe	John	1/6/1970	No	ARR14-006599	link	442	Property Crime	Convicted	6/25/2014	7/6/2014	11	PC459
10	5/29/2014	Doe	John	1/7/1970	No	ARR14-006614	link	333	Violent Crime	Convicted	6/26/2014	7/7/2014	11	PC243
11	5/29/2014	Doe	John	1/8/1970	Yes	ARR14-006618	link	267	Assault on Offic	Convicted	6/27/2014	7/8/2014	11	PC422
12	5/29/2014	Doe	John	1/9/1970	Yes	ARR14-006619	link	397	Property Crime	Convicted	6/28/2014	7/9/2014	11	PC484
13	5/29/2014	Doe	John	1/10/1970	Yes	ARR14-006620	link	415	Narcotics	Convicted	6/29/2014	7/10/2014	11	HS11550
14	5/29/2014	Doe	John	1/11/1970	Yes	ARR14-006622	link	423	Non-DA Cases	Convicted	6/30/2014	7/11/2014	11	BWF
15	5/30/2014	Doe	John	1/12/1970	Yes	ARR14-006625	link	415	DUI	Convicted	7/1/2014	7/12/2014	11	VC23152
40	E (00 (00 4 4				8.1			000	DUI					10000450

To obtain the information from EVIDENCE.com, it is of great importance for officers to correctly input all report numbers when tagging their BWV files. Our officers do this by using the "AXON Mobile" application installed on their department issued iPhones. The body camera is wirelessly connected to each officer's iPhone via Bluetooth. After an arrest is made with a camera, the officer opens the "AXON Mobile" application on their iPhone, inputs the report number, and categorizes the video file as an "arrest", which is displayed in the drop-down menu option. We recognized that officer error (e.g., officers forgetting to input the report number or inputting the report number in the wrong format) could potentially be a tracking problem and decrease the internal validity of our data. To ensure accuracy, I complete daily audits of all arrests made to ensure the report numbers are accurate so the tracking program will be able to accurately locate all arrests made with and without cameras.

# **Tracking Compliance**

The Ventura Police Department's BWV randomized controlled trial started June 1, 2014. Tracking the use of the cameras is an important part of the implementation process. Upon request, the data analysis team at EVIDENCE.com provides us reports on how many hours of video are being uploaded. In addition, I worked with the analysts at EVIDENCE.com to obtain data about compliance. By providing them with our randomization schedule, they are able to provide us data on the number of hours video is recorded during the experimental shifts and the controlled shifts. This is valuable information because video should not be recorded during the controlled shifts. Tracking compliance with the randomization schedule is very important to avoid contaminating the data for the RCT. Non-compliance of the randomization schedule can quickly jeopardize the integrity of the experiment. During the first month of VPD's randomized controlled trial, officers recorded a total of 1,554 video files or 299.6 hours of video recording during the experimental shifts and 163 video files or 32.1 hours of video recording during the controlled shifts. Considering cameras should not be used during controlled shifts, an intervention meeting was held to increase officer compliance with the randomization schedule.

On June 20, 2014, supervisors and command staff at VPD met to discuss our progress implementing BWV cameras. During the meeting, I reported on the short-term effects the cameras were already having within our department and highlighted two facts: since the implementation of cameras there had been zero use-of-force instances and BWV had already protected three officers from bogus citizens' complaints. In addition, I presented the data above which showed some officers were using the cameras on controlled shifts which could jeopardize the internal validity of the experiment.

The success of the cameras revived the conviction of police managers and reinforced their belief in the body camera technology. Command staff stressed the importance of this technology to the group and supervisors became professionally invested in the success of our BWV camera experiment.

To address contamination issues, management decided to use intervention methods to increase compliance with the randomization schedule. An audit was conducted to identify officers using the cameras during controlled shifts. In an attempt to show officers the benefit of BWV cameras and increase compliance, we decided that we needed to actively promote the benefits that had come from using the cameras and ensure compliance to our BWV policy.

Supervisors purposely engaged officers in discussions about the benefits of the cameras. In addition, supervisors communicated to the entire department via email about ways to improve compliance. Supervisors, also, began a systematic method of obtaining

compliance and enforcing policy which came in the form of personal counseling, education and emails outlining how to fix the most common compliance issues.

Supervisors, who contacted each identified non-compliant officer, first explained why it was important to only use BWV cameras during experimental shifts and then asked them to comply with the randomization schedule. We discovered that some officers were using cameras during controlled shifts because they felt morally inclined to provide the best evidence and/or protect themselves from false or bogus complaints.

As depicted in the chart below, we suffered from contamination at the beginning of Ventura's RCT. What seems to be the causal mechanism of change in the failure to satisfy the integrity of the random assignment of shifts was an intervention meeting and subsequent steps by supervisors to increase compliance. By applying the previous intervention methods VPD increased compliance by 76% in one month and by 92% in the first four months of the experiment.



Chart 1. Compliance of Random Assignment

In the month of June, there were a total of 163 video files recorded during the controlled shift or 32.1 hours of video footage. In July, the number of video files recorded during controlled days decreased to 38 or 4.7 hours of recorded video footage. The number of video files recorded during controlled shifts in August was 19 or 3.6 hours of recorded video footage. In September, there were a total of 16 video files recorded during controlled shifts or 2.5 hours of recorded video footage. A chart is depicted below which shows contamination levels during the first four months of Ventura's RCT.



## Chart 2. Total Hours of BWV Recordings

The decreasing number of non-compliant uploads each month indicates that our interventions improved compliance by 92% from June 1<sup>st</sup> to October 1<sup>st</sup> 2014. In addition, some of the 16 recorded video files in September occurred because officers made late arrests causing them to work into the controlled shift hours. There were also several incidents of

officers who took test videos during controlled shift periods because they were having technical issues with their camera.

The table below shows a contamination report from EVIDENCE.com showing the number of video files uploaded per month. The "Cameras On" row shows video files uploaded during the experimental shifts. The "No Cameras" row shows video files uploaded during the controlled shifts.

Table 4. Total <u>Number</u> of Video Files Recorded per Month

		Crand Total			
Shifts - Camera On/Off	June	July	August	September	Grand Total
Cameras On	1,544	1,036	1,126	1,100	4,806
No Cameras	163	38	19	16	236
Grand Total	1,707	1,074	1,145	1,116	5,042

Table 5. Total Hours of Video Recordings per Month

Shifts - Camera On/Off	June 2014	July 2014	August 2014	September 2014	Grand Total
Cameras On	299.6	190.5	191.9	182.5	864.64 Hrs
No Cameras	32.1	4.7	3.6	2.5	42.81 Hrs
Grand Total	331.77 Hrs	195.18 Hrs	195.50 Hrs	185.01 Hrs	907.45 Hrs

During the first 4 months of the experiment, there were a total of 907.45 hours of recorded video footage captured by the 42 patrol officers participating in the experiment. Of the 2928 hours since the experiment started, the 42 officers recorded a total of 907.45 hours of footage. During experimental shifts (cameras on) officers were recording during 2.67 % of their entire shift. During controlled shifts (cameras off) officers were recording .13 % of their entire shift. The average officer was recording an average of 21.84 minutes per 13 hour patrol shift.

The table below shows the total hours of footage (June 1<sup>st</sup> through October 1<sup>st</sup> 2014) and the percentage of time cameras are recording during officers "on duty time".

Table 6. Percentage of Time Officers are Recording

Shifts - Camera On/Off	Duration Hours 2014	Percentage "On Duty" 2014
Cameras On	864.6	2.67%
No Cameras	42.8	0.13%

## **Discussion of Compliance Recommendations**

While we had tremendous success in increasing our compliance rate, I recognize we could have done a better job. In the next paragraph, I will make additional recommendations for future experiments to help sustain the experiment and preserve the integrity of the data. I believe these recommendations will maximize the chances of not only starting with but maintaining department-wide compliance. I also believe these recommendations will help save an agency from the need to come up with rectification strategies after the experiment is underway.

# **7** Steps to Integration

Referring to the organizational chart discussed in Chapter Seven, after the evidence-

based implementation team has developed a culture ready for integration, I recommend the

transition team consistently perform the following seven steps to sustain the fidelity of the

experiment.

	7 Steps to Integration
1)	Make communicating the progress of the implementation of the BWV camera experiment a regular occurrence by:
	(a.) Have patrol sergeants give weekly, if not daily, updates on the experiment during patrol team briefings to provide a forum for officers to give feedback.
	(b.) Encourage supervisors to engage in an open dialogue with officers about the positive ramifications of the cameras.
	(c.) Include monthly newsletter updates from the transition manager which communicates the advantages of the cameras.
2)	Empower the stakeholders by seeking their input on ways to improve the experiment and then implement their ideas, whenever possible.
3)	Reward officers and publicly praise officers' heroic or commendable behavior captured on BWV cameras.
4)	Before the experiment begins, discuss with officers the importance of sustaining the experiment and preserving the integrity of the data. Discuss ways that the experiment can be contaminated and ways the integrity of the experiment can be jeopardized.
5)	Pay attention to and address cynical officers who could act as influential culture carriers within the police organization and who could derail the progress of the implementation.
6)	Include a way to get feedback from IT personnel and the crime analysis team so concerns can be quickly met and messages communicated effectively.
7)	Move to integrate evidence-based policing by including it in the department's performance evaluations and therefore incentivizing the integration of its application
Claused 2	7 Stone to Intermetion

Chart 3. 7 Steps to Integration

## Conclusion

This entire chapter was written to demonstrate and emphasize the importance of collecting data to answer the research questions and systematically tracking data to ensure experimental fidelity. I provided the way data is collected to identify citizens' complaints, use-of-force incidents, and prosecution outcomes, including the data elements. I also discussed the methods we used to discover that contamination had crept into our experiment

during the first four months. These methods provided us with the total hours video was recorded during experimental shifts and the total hours video was recorded during the controlled shifts. By tracking the amount of time officers were using their cameras during controlled shifts, we were able to target compliance problems, test rectification strategies and track the data to increase Ventura's RCT protocol compliance by 92%. In addition, I offer recommendations listed in my 7 Steps to Integration, for other agencies so they can avoid contamination issues to sustain the integrity of their experiment.

#### **Chapter Seven: Recommendations**

The first part of this chapter offers recommendations to other police agencies looking to implement a BWV camera experiment. Based on my experiences implementing a BWV camera experiment, I emphasise the importance of developing a transition team that is sufficiently staffed by members of the organization who have enough influence to garner support from the body of the organization. This team, outlined below, should have the capability to inspire the culture change within the organization. Once the body of the organization understands and echoes the need for an evidence-based change the transition team can systematically guide the transition to its inevitable destination.

Following the organizational chart, I offer a recommendation that IT needs for the future need to be anticipated and prepared for when IT upgrades occur. I anticipate there will be future technological demands such as the storage of on-scene photographs.

#### **Organizational Chart for Transition Team**

A transformation leader, a pracademic, and an evidence-based policing committee can be an effective guiding coalition to help a department start the transition to an evidence-based culture. However, when it comes to actually transitioning and integrating a BWV camera experiment, a well-defined transition team is critical. There are several reasons a transition team is critical. First, a pracademic's role is not to be an authoritarian but rather someone who can offer consultation for the experiment. Second, a transition team adds many members across the organizational chart of the department to support the evidence-based culture change and implement the experiment. Kotter's recommendations regarding the composition of a guiding coalition for the testing of innovations are a valuable source when organizing an effective team. The guidelines include the following:

- include people who have enough authority to oversee the implementation,
- be sure the members are respected and can garner support within the organization,
- have enough key players so that those left out cannot block the progress, and
- include those who represent different points of view ("The 8-Step Process," n.d., p. 1-2).

Based on my experience, I have developed an organizational chart for a transition team that I would recommend to agencies wanting to implement an experiment. I would recommend that members of the evidence-based policing committee be included on the transition team as they have been trained in evidence-based practices.

Following is a proposed organizational chart for the transition team designed for other police agencies looking to implement a BWV camera experiment. In addition, this organization chart could be used for testing other innovations within a police agency.

# **Transition Team**



Chart 4. Transition Team

#### Information Technology (IT) Transition

Referring back to the organizational chart, the Field Operations Supervisor will manage the IT transition with support from the assigned officer. Plans to upgrade the IT systems to accommodate body cameras should also include plans for future technological demands. Such future plans could include the technology of on-scene photographs taken from smart phones by officers from their EVIDENCE.com app on their department issued phone. This would allow picture evidence at crime scenes to go directly into an officer's already existing EVIDENCE.com account. When evidence is needed for court, the designated court liaison could simply search for the report number in EVIDENCE.com and find, not only BWV files; but, pictures of the crime scene that the officer took while on scene. All evidence could then be forwarded to the assigned attorney which would be no harder than sending an attachment in an email. In addition, this would eliminate the need to purchase cameras, memory cards, and personnel to manage photographic evidence.

## Conclusion

The recommendations in this chapter were included to help give police agencies the ability to transition the current policing culture by investing in an influential transition team staffed by a variety of officers in different ranks and positions. This transition team will oversee the BWV camera randomized controlled trial. An organizational chart for the transition team including a job overview was also provided. In addition, recommendations for future IT considerations was also included.

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#### **Chapter Eight: Discussion and Findings**

This chapter will summarize important findings from this thesis and provide a discussion of several important topics. The first finding will be the importance of a police agency leaving behind the status quo and embracing an evidence-based policing culture. The second finding will be the actual importance of this implementation guide for those preparing an implementation strategy in the future. In addition, I will present the most important findings in the implementation guide. These findings will include the guiding coalition and the role of the pracademic. I will also include findings on tracking compliance and interventions that have helped reduce contamination in Ventura's experiment.

Based on my experience, I will include a discussion and make recommendations on future steps to take to sustain an experiment. I will also introduce a possible contamination issue in the Rialto experiment and welcome future research on this topic. I will discuss the anticipated findings of Ventura's BWV camera randomized controlled trial. This will include my anticipation of strengthening Rialto's findings and showing the effects of BWV on prosecution outcomes at the conclusion of VPD's experiment.

As the retention of BWV evidence is a pressing topic for police agencies, I am including a discussion on cloud-based storage. This information should be considered when making a decision on how to store BWV evidence.

Lastly, I will discuss the role of the University of Cambridge in educating pracademics to oversee a culture change and guide the targeting, testing, and tracking of new innovations. I will show how the University of Cambridge made Ventura's BWV camera randomized controlled trial experiment possible by providing their experience and assistance in helping to design our implementation plan and move the experiment forward.
### Need for an Evidence-Based Culture

As previously discussed, many police agencies resist change, as the status quo is preferred. In other agencies that might actually consider change, current crises like the reoccurring stabbings and shootings give way to planning for the advancement of policing methods. It seems that a discussion on how to use resources and officers to maximize results is not a priority until there is a scandal or crisis.

This is encapsulated in the recent shooting of an unarmed black man by a white police officer not wearing a body camera in Ferguson, Missouri. The resultant rioting, looting and protests have "cost St. Louis County more than \$4 million" ("Riots in Ferguson, Mo.," 2014, para. 1). This includes "\$2.6 million" on police overtime and "\$170,000...for damage to police cars caused by rioters" ("Riots in Ferguson, Mo.," 2014, para. 2). While the damages and thefts have been costly, the most damaging loss and lasting consequence of this incident is the increased mistrust created between the community and the police department. Because this incident was not captured on video and the evidence was not quickly released to the public, the community came up with what they believed happened and the rumors spread until they became accepted as truth. In addition, these rumors that grew out of the small town of Ferguson have now spread internationally.

Racism, police legitimacy, and accountability have become topics for intense debate regarding perception versus reality. Had the encounter been recorded with a BWV camera, this issue could have been quickly resolved without rioting and looting. The video would have shown the incident from the officer's point of view and would have acted as an effective communication tool. A \$300.00 camera could have potentially saved the resultant damage to police and citizen relations along with millions of dollars in costs.

So how does a police agency successfully implement new innovations such as body cameras to improve services and cut costs? Does the agency just say, for instance, "Now we are going to use body cameras"? The answer is a resounding "NO". A status quo department is not going to embrace a new innovation overnight. As explained in Chapter Two, successfully implementing a new innovation within an organization first starts with a culture change.

Chapter Two provides generic literature for those wanting to create an evidence-based culture change, determine the viability of innovations and implement experiments to test effectiveness. The "Stages of Community Readiness" (Edwards et al., 2000, p. 297-300; Fixen et al., 2005, p. 10) and "The 8-Step Process for Leading Change" ("The 8-Step Process," n.d., p. 1; Kotter, 2014, p. 1) are valuable resources for implementing change.

## Thematic Guide to Implementation-Important Findings and Discussions

While the findings in Chapter Two are important, there exists a gap in literature relating to the practical implementation and integration of an evidence-based culture. This thesis is specifically designed to fill this gap and provide a thematic guide for any police agency around the world seeking an evidence-based culture change that will embrace the testing of new innovations. Chapter Four is the presentation of this thematic guide for integrating a culture change. Chapter Five is the presentation of this thematic guide for testing BWV cameras within a police agency. In the following sections, I will emphasize a few of the most critical findings in this implementation guide and discuss anticipation of future findings. I will also discuss recommendations on sustaining an experiment and a possible contamination in the Rialto RCT.

**Findings on guiding coalitions and the role of a pracademic.** One of the most important findings in the thematic guides is the need for two guiding coalitions working together to create an evidence-based culture change and lead experiments to test new innovations. My findings suggest an evidence-based committee, which includes the

pracademic, as an important group to inspire the culture change. It is important for members of the committee to have training in the importance of evidence-based policing so they can inspire others in this change. I recommend that members of the committee attend patrol briefings and training days to lead an open dialogue with officers regarding the need for evidence within a police organization.

The organization of the second guiding coalition or transition team is a requisite for any police agency looking to integrate and sustain a police culture that accepts the testing of innovations. I recommend some members from the evidence-based committee, including the pracademic, should serve on this team. This team should have enough members, power, and influence within the organization to garner support from the body of the organization. For this thesis, the transition team is tasked with the implementation of the BWV camera randomized controlled trial.

It should be the goal of both the evidence-based committee and the transition team to work together to drive the desire for evidence-based policing and the testing of innovations deep within the organization. It would be the goal of the guiding coalitions that members of the organization would crave an evidence-based change. Once the members crave this change, sustaining its ideology will be the natural and expected progression. The importance of these guiding coalitions cannot be understated or understaffed, for they are tasked with not just implementing a police practice but inspiring others to think differently.

If the guiding coalitions do their job effectively, the culture of police officers will echo the need for a change. Once the general body of the police organization understands and desires the change, the transition team can simply guide the progress to its inevitable and irresistible destination of evidence-based policing which should be the overarching goal of these teams. But who can be the catalyst for change on the evidence-based committee and the transition team with the experience and education to guide the evidence-based culture change? Who can provide the research and help to prepare implementation plans to test new innovations? The answer is a pracademic. As discussed previously, a pracademic can bridge the gap between the world of academics and the world of practice to help guide the culture change and scientifically prove the effectiveness of innovations. The pracademic has experience working within the police organization and has also been a student of evidence-based policing.

**Findings on tracking.** As discussed in Chapter Six, this implementation thesis will be valuable to demonstrate how a police agency can not only implement and test an experiment; but, more importantly how they can sustain the experiment and preserve the integrity of the data by tracking compliance.

During the first month of Ventura Police Department's BWV experiment, we monitored the fidelity of the random assignment of shifts by patrol officers assigned to the experiment. Within the first month, we discovered contamination issues where officers were using their cameras during controlled shifts. In the month of June, there were a total of 163 video files recorded during the controlled shift or 32.1 hours of video footage. This caused great concern for the overall validity of Ventura's BWV experiment which caused us to test interventions to increase compliance to the RCT protocol.

We first targeted the problem of contamination and then tested interventions to see if they would increase compliance of the RCT protocol. The interventions included:

- promote the benefits of the cameras via email and personal communication,
- engage officers in discussions about the benefits of the cameras,
- communicate the importance of the RCT protocol by personal communication and departmental email,
- identify non-compliant officers, and
- enforce BWV policy.

After applying this intervention, we tracked the data to see if the tested intervention was effective. In one month, we were able to increase compliance to the random assignment of shifts by 76%. By the end of September, we were able to increase officer compliance by 92% over the four-month period.

# Discussion and recommendation on sustaining an experiment. Our findings show

that we experienced tremendous success by increasing our compliance rate. However, I recognize we could have done a better job and provide recommendations listed in Chapter Six titled, "The 7 Steps to Integration". A summary of the 7 Steps are listed below.



Figure 1. Summary of 7 Steps to Integration

The "7 Steps to Integration" give police agencies strategies to sustain compliance and avoid having to introduce rectification strategies.

**Discussion on another possible contamination.** There should also be another discussion about possible contamination for those preparing implementation strategies in the future. Could it be that a police chief could unknowingly influence the integrity of an experiment?

A chief sets the priorities for his department. In the Rialto experiment, Chief Farrar could have unavoidably created a bias because of his rank of chief when he explained to his department that he would be conducting a yearlong BWV camera experiment in an attempt to reduce citizens' complaints and use-of-force incidents. It is possible that the Chief's communicated objectives and influence over his officers were, in part, responsible for the decrease in citizens' complaints and use-of-force incidents. Because the theme of this thesis is implementation, I purposely did not address this possible contamination issue in the Rialto study. I welcome future research into the topic.

**Future findings to anticipate.** As discussed above, the Ventura experiment and the Rialto experiment both test the effects of BWV cameras on police use of force and citizens' complaints. The findings of the Ventura BWV camera experiment will be analyzed at the end of the 12-month experiment. At the conclusion of the analysis, it will be determined if Ventura's findings will add statistical validity to the Rialto experiment. These findings will be important for other police agencies looking to implement BWV cameras. There also exists a major gap in another potential benefit of the use of BWV cameras. This gap is the testing of the effects of BWV on prosecution outcomes. Ventura Police Department's BWV experiment is a groundbreaking study and will be the first of its kind to see if the effects of BWV will result in fewer criminal cases being rejected, while increasing the number of early guilty pleas and conviction rates. At the conclusion of the 12-month experiment, we will

show the results and impact that BWV has on prosecution outcomes. This will be a valuable source for those preparing implementation strategies for BWV cameras experiments in the future. I hope there will be future experiments to test prosecution outcomes to help validate the results of the Ventura experiment.

#### **Discussion on Cloud-Based Storage**

There is surmounting attention and interest to the topic of cloud-based storage of police evidence. In a technologically growing society, the storage of evidence has been of much discussion. Two questions often posed relating to cloud-based storage are security and cost. Police agencies, in particular, often sight security concerns when looking to move to cloud based storage but rarely take an introverted look at their current IT security standards.

Most agencies in the United States have a relatively small IT department and offer little security to their electronically stored data. EVIDENCE.com uses Amazon Web Services (AWS) to store all BWV files collected by TASER body cameras. While there seems to be little concern about the safety of locally stored data, cloud-based storage from AWS, offers an infrastructure backed by a \$2 billion security investment ("Amazon Web Services," 2014, p. 1).

AWS's security is also backed by academics like Professor Robert L. Grossman of the University of Illinois at Chicago who stated that Amazon's APIs are today's "de facto standard" for cloud based storage (Grossman, 2009, p. 26). IT storage standards within local police department's currently do not compare to the security of AWS. Therefore, cloud based storage presented by AWS can offer police agencies a secure location to store their electronic data, specifically BWV files ("Amazon Web Services," 2014, p. 1).

## **University of Cambridge**

As discussed in the previous sections, there is great need for police agencies to invest in experimental police research. I have found from my experience that who performs and backs the experiment is of great importance to stakeholders. If I would have proposed conducting a randomized controlled trial with another less prestigious university, my support would have been significantly diminished. One of the main reasons I was allowed to conduct an experiment at VPD is solely because it was being supervised by some of the most respected criminologists in their field and facilitated at one of the most reputable universities in the world. This provided our stakeholders not only confidence that the experiment would be properly supervised but gave our department and community pride that we could pursue such a ground-breaking study with such a reputable university.

## **Summary of Findings**

The reason this first of its kind thesis is important is because it provides a practical thematic approach to developing an implementation strategy for agencies looking to integrate evidence-based policing and test innovations. As discussed in Chapter Two, much of the current literature on implementation is generic in content. This leaves police agencies confused on how to practically transition a department to evidence-based policing and implement the testing of new innovations. The value of this thesis is its practical, thematic approach which takes us past the theory of change to the actual application of change.

The ideas espoused within this thesis aim to give police agencies the latitude to address their own problems but from a foundation supported by empirical evidence. Once an agency has adopted evidence-based policing as their standard, they can explore solutions to address their most serious problems with confidence backed by evidence. This standard can move a status quo police department into a police agency with increased police accountability and public trust. This adopted mind-set can leave behind the status quo police agencies who still apply the 3 Rs to their policing strategies and progressively move towards the philosophies encapsulated within the Triple T. This evidence-based transition will maximize our policing efforts so that we may provide the best possible service to our community.

This thesis was designed so that any police practitioner in the world can pick it up and use it as a guide to adopt evidence-based policing within their own agency. What I hope police agencies will realize is that experimental criminology is not just for academics. I hope the reader will see that the Ventura Police Department has demonstrated how it is possible for someone at the rank of officer to implement a RCT, in corroboration with academics. I hope when agencies realize it is possible to integrate an evidence-based foundation that it will start a movement that will exponentially grow the rate at which police agencies embrace evidencebased policing and adopt experimentation.

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