Using Root Cause Analysis to Instill a Culture of Self-Improvement:
Program Replication Materials
Innovations in Criminal Justice Summit III
April 20-21, 2015

This white paper describes an internal Root Cause Analysis ("RCA") conducted by the Montgomery County, PA District Attorney's Office ("DA") in partnership with the Quattrone Center for the Fair Administration of Justice, an interdisciplinary research and policy center within the University of Pennsylvania Law School ("Quattrone Center"). The Quattrone Center specializes in RCA regarding errors within the criminal justice system. RCA has been used in complex and fragmented industries (e.g., healthcare, aviation, nuclear power) to understand the various factors (direct and environmental) that lead to both individual and systemic-based errors, and to provide interventions that can effectively prevent future error.

1. **Project Description.** The DA and Quattrone Center agreed to use RCA principles in an effort to identify specific practices regarding investigative and prosecutorial integrity that could be implemented by the DA to help ensure the fair administration of justice. For review, the DA selected a recent criminal case in which an unintentional yet significant investigative error had occurred. In 2014, the DA investigated and then filed criminal charges against an individual for allegedly committing various criminal offenses. The matter was widely reported by various media outlets. Months later, the DA withdrew all charges after learning that certain personnel had unintentionally misinterpreted certain laboratory testing results during the investigation. The mistake harmed both the prosecution of that case and certain community perceptions regarding the DA's Office.

   The RCA served to supplement the DA's response to these events, and led to the implementation of new best practices within the DA Office specifically designed to help prevent errors and ensure appropriate case outcomes. Both the DA and Quattrone Center believe that this RCA has benefit for other prosecutors, and may be implemented in other offices regardless of size or setting (urban, rural, etc.) This document describes the nature of the RCA program and its components, including detail necessary to replicate the program in other jurisdictions. Likewise, both the DA and Quattrone Center are available for additional discussion and consultation.

2. **Project Goals.** The goals of the project were as follows:

   A. **Understand the different factors and causes** (root and proximate) which contributed to the misinterpretation by DA personnel acting in good faith, and which prevented personnel from quickly identifying and correcting the mistake.
   B. **Devise recommendations for best practices** by the DA to help prevent future error, ensure prosecutorial integrity, and promote fairness following an extensive review of current DA policy and practices

C. **Implement the recommendations** for best practices in a manner that optimizes cultural acceptance within the DA's Office and allows public perception to focus upon adherence with professional standards.

D. **Establish a culture of review and improvement** within the DA's Office that is both consistent and constant, ensuring that errors and "near misses" are reported to supervisory personnel within the Office in a timely matter for review and evaluation, and allowing regular assessment of policies, practices and procedures to further improve accuracy and fairness over time.

3. **RCA Initiation and Participants.** The RCA was initiated by the DA and Quattrone Center, with participation as follows:

A. **The Montgomery County District Attorney's Office ("DA")** is designated by statute as the chief county law enforcement officer, and is generally responsible for prosecuting criminal cases that occur in Montgomery County, PA. The DA is comprised of 46 attorneys, 42 support staff, and 57 sworn/non-sworn investigators. Criminal cases are generated by 49 local police departments and County Detectives (under DA supervision). In 2013, the Office brought 9,051 cases to final disposition. DA personnel included:

i. District Attorney Risa Vetri Ferman
ii. First Assistant District Attorney Kevin R. Steele
iii. Chief County Detective Samuel Gallen
iv. Deputy Chief County Detective Mark Bernstiel

B. **The Quattrone Center for the Fair Administration of Justice ("Quattrone Center")** is the national leader in the application of a systems approach to error reduction in the administration of justice. The Quattrone Center is comprised of investigators from the fields of medicine, transportation and law who are experienced in the conduct of RCA in their respective fields. Quattrone Center participants in this RCA had specific expertise in criminal justice, and worked with DA personnel to conduct a just culture event review that would enable all participants to understand the underlying circumstances and actions that enabled the misinterpretation of the test results and the subsequent use of the inaccurate data, and identify implementable practices that may help prevent similar events from occurring in the future. Quattrone Center personnel included:

i. Quattrone Center Executive Director John Hollway
ii. Lee Fleisher, MD, Faculty Member and expert in evidence-based healthcare reviews
iii. Steven Raper, MD, Faculty Member and expert in healthcare RCA

iv. Chief Operating Officer David Mayer, National Transportation Safety Board, an expert in safety-based transportation event reviews

4. **General RCA Principles.** Despite good faith efforts by prosecutors and other law enforcement personnel, mistakes (also called "unintended outcomes," "adverse events," "organizational accidents" etc.) will occur in prosecutors' offices, just as they do in any complex industry. The DA believes that prosecutors serve as ministers of justice who are responsible for ensuring the fair administration of justice. Providing for a just culture[1] of continuous improvement that is designed to minimize the occurrence of adverse events is viewed as an essential component regardless of whether errors even occur, since the number of adverse events is a poor indicator of the general safety of a system. Organizations with unsafe systems may not necessarily suffer adverse events, or may not recognize that they occur. Measures designed to reduce the likelihood of these events thus retain their value. "Safe organizations can still have bad adverse events, whereas unsafe systems can escape them for long periods. Furthermore, progress creates new risk that is difficult to anticipate but is a feature of new procedures and technologies."[2]

When errors occur, organizations must take corrective actions and find potential solutions that eliminate or minimize the risk of repeating the error. Root Cause Analysis (RCA) is a critical step of determining corrective actions and may be the most important part of establishing *proper* corrective actions. RCA has been used productively not only throughout the healthcare industry (including within clinical and toxicology laboratories as well as other settings), but also in aviation, manufacturing and other quality-minded industries. Each industry conducts event reviews that lead to actionable change of policies and procedures to reduce the occurrence of an adverse event or adverse events. The goal of RCA is to learn from adverse events and "near misses," implementing proactive changes to reduce the likelihood of additional events that may compromise accuracy and reliability.

An important feature of the RCA is that it is a blame-free analysis: "[B]laming and punishing for adverse events that are made by well-intentioned people . . . drives the problem of iatrogenic harm underground and alienates people who are best placed to prevent such problems from recurring." [3] Note that this does not mean that individuals who intentionally or recklessly committed misconduct avoid accountability for their actions, but rather that such disciplinary action occurs outside of the RCA environment. This preserves the sanctity of the RCA as an event review, encouraging an open and frank discussion about system improvement rather than a

[1] A "just culture" can be defined as "a culture that recognizes that competent professionals make mistakes and acknowledges that even competent professionals will develop unhealthy norms (shortcuts, "routine rule violations"), but has zero tolerance for reckless behavior." Agency for Healthcare Research & Quality Glossary, available at http://psnet.ahrq.gov/popup_glossary.aspx?name=justculture.

[2] Barach P, Berwick DM. Patient Safety and the reliability of health care systems. Ann Intern Med 2003, 138(12):997-8.

[3] Rinciman WB, Merry AF, *Error, blame, and the law in health care – an antipodean perspective.* Ann Intern Med. 2003 Jun 17; 138(12):974-9.

counterproductive discussion of blame which would likely minimize the very information flow needed to optimize the review.

5. **<u>Key Principles in Conducting an RCA</u>.** It cannot be emphasized enough that RCAs are event reviews intended for learning, not punishment**.** They are not performance evaluations. Accordingly, personnel and discipline issues that arise from an RCA investigation should be handled through a separate process from RCA. The "just culture" focus of the RCA employs shared accountability, and the system is responsible for providing an environment that is optimally designed for safe care with staff responsible for their choices of behavior and for reporting system vulnerabilities.[4]

   While specific recommendations for the conduct of RCAs may differ between industries, certain themes appear to remain consistent upon review:

   A. Construction. RCAs should be performed by a team.
      i. RCAs often work best when performed by multidisciplinary teams of 4-10 members from all levels of staff with fundamental knowledge of the specific area involved.
      ii. The team should include staff who were not involved with the specific incident to ensure review objectivity.
      iii. A facilitator should be appointed who was not directly involved in the incident.

   B. Investigation. The event should be carefully analyzed for all causal factors.
      i. Detailed event review conducted by the team of the event
      ii. Define problem event – *what* went wrong. Is this a one-time occurrence or a recurring incident?
      iii. Identify root causes/contributing factors – *why* it went wrong. Focus on objective causes and minimize "bad apple" causation conclusions wherever possible.
      iv. Prioritize factors that contributed to the harm, evaluating each for severity and probability to cause harm in the future.
      v. Develop interventions that conform to the prioritization and likelihood of repetition for each factor.

   C. Recommendation. The team should make specific, prioritized recommendations for interventions that are intended to prevent occurrences of similar events. These recommendations should be made in writing and stored for future review as needed.

   D. Implementation. Implement the recommended practices, considering the quality of analysis, cost, and likely real-world impact upon accuracy and reliability.

[4] Agrawal, A, *Patient Safety: A Case-based Comprehensive Guide*, 2014.

E. Evaluation. Evaluate the interventions and take subsequent additional action as needed.

F. Professional Standards and "Just Culture". A "Just Culture" balances blame-free event reviews with the need for professionals, including FSSPs, to be personally accountable for adherence to reasonable standards of professional conduct. Typically, this involves the creation of a separate disciplinary process in the event that the RCA uncovers evidence of intentional or reckless wrongdoing by any individual. A sample tool to assess the necessity for such a parallel disciplinary process in a hospital setting is attached. In order to preserve the integrity of the RCA as a blame-free event review, it is important that any disciplinary process be additional to, and separate from, the RCA. The individual in charge of making determinations about disciplinary action should be informed by, but not report to or be directly involved with the RCA itself.

In accordance with the above principles, Quattrone Center participants and DA personnel, including prosecutors and investigators, worked together and provided a framework for conducting a "just-culture event review" necessary for a successful RCA.

6. <u>Specific Implementation by DA of RCA Process</u>. The RCA process implemented by the Quattrone Center and DA is shown below:

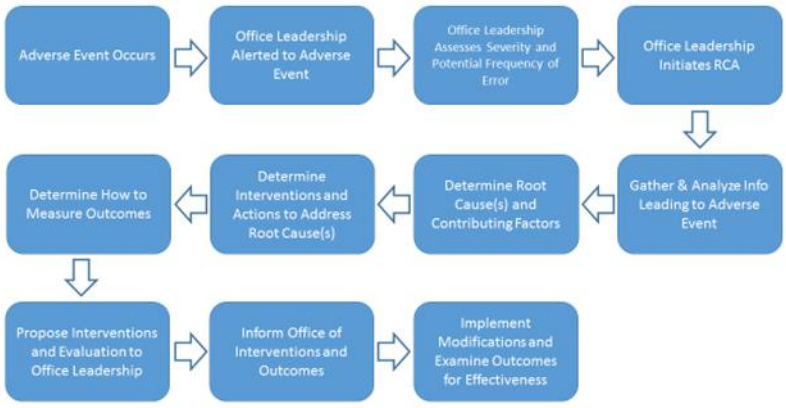

Figure 5. Root Cause Analysis Process.

Upon initiation of the RCA process, the Quattrone Center assembled a team that blended expertise in law enforcement, criminal justice and the conduct of RCAs in environments other than criminal justice (e.g., healthcare and transportation event reviews). Quattrone Center personnel met with DA leadership including the District Attorney, First Assistant District Attorney, Chief County Detective and Deputy Chief County Detective. The parties collaborated to establish an investigation of the adverse event, after which the Quattrone Center compiled a list that identified contributory factors that permitted the adverse events to occur. The DA reviewed these items, and retained sole authority over what, if any, modifications would be

implemented. The Quattrone Center was invited to offer suggestions or refinements to the proposed modifications before they were finalized by the District Attorney. The DA expressed an interest in continuing its partnership with the Quattrone Center by collaborating to devise metrics that could measure the impact of those recommended practices that the DA elected to implement.

7. **Contributory Factors Identified by the RCA**. The RCA found no intentional misconduct by DA personnel. It did, however, reveal several contributory factors within the DA's Office that permitted the unintentional adverse event to occur. Discussion of these factors by the Quattrone Center and DA leadership permitted a holistic and wide-reaching understanding of existing office policies and procedures, and environmental circumstances that contributed to the event occurrence. Contributing factors included:

   A. Policy regarding internal discussion and review of "high-profile" investigations, including the focus placed upon confidentiality and retaining information control over an investigation that was likely to receive intense media focus.

   B. Process for receiving laboratory results from hospitals. Lack of uniform process for standardizing data contained in reports received from unfamiliar laboratories.

   C. Standards for attorney and detective review of data contained in lab results.

   D. Policy for independent and supervisory reviews of investigative findings and proposed charging decisions.

   E. Methodology for "communication handoffs," where investigative information related to the case was transferred from one individual or agency to another, including

      i. Medical personnel to detective
      ii. Crime Victim to attorney and/or detective
      iii. Attorney to supervisory personnel

      iv. Detective to supervisory personnel
      v. Attorney to defense counsel
      vi. Procedures for documenting investigative activity and findings
      vii. Oversight regarding appropriate workload for participating attorneys and detectives

8. **<u>RCA Recommendations Implemented by DA.</u>** The DA implemented recommendations generated by the RCA designed to promote accuracy and reliability as follows:

   A. **Established new attorney positions**. The DA announced two new positions designed to provide independent case review and implement professional standards designed to ensure accuracy and prevent error:

      i. *Deputy District Attorney for Professional Standards*: an "ombudsman" position primarily responsible for reviewing investigative results, charging decisions and related matters to ensure accuracy, reliability, fairness and appropriate case dispositions.

      ii. *Assistant Chief of Trials:* an additional supervisory position within the Trials Division responsible for providing oversight and support to attorneys with regard to prosecutorial decisions.

   B. **Implemented improvements in review of charging determinations** (early case review, supervisory approval of charges prior to filing, etc.)

   C. **Implemented improvements in review of investigative findings** (creation of review teams, DA pre-approval of search warrants, etc.).

   D. **Seek formal accreditation for Montgomery County Detective Bureau**, including expansion of job responsibilities of Chief County Detective and Deputy Chief County Detective to include accreditation-related supervisory duties.

   E. **Reallocated responsibilities within County Detective Bureau** to provide most effective oversight and review capabilities, including creation of Violent Crime and Technology Unit;

9. **<u>Training Initiative</u>**. In order to most effectively implement RCA recommendations, the DA directed that all personnel receive training regarding best practices. Consistent with promoting a "just culture" within the office, training will include specific information relating to this RCA and adverse event and be presented by personnel who were involved with the matter. Discussion will include the contributing individual, supervisory, and environmental factor. The Quattrone Center is now working with the DA's Office to measure the impact of the implementation of these improvements to the Office.

10. **<u>Project Design and Implementation</u>.** The RCA project was quickly designed and implemented without significant challenge. The Quattrone Center provided expertise regarding

the RCA, and was able to rapidly educate the DA concerning relevant principles and necessary standards. Important considerations include:

A. Need for Confidentiality. Confidentiality and the need to protect information relating to criminal offenses may be a concern for some prosecutors. However, the adverse event in this matter was already reported in the media, which made confidentiality less of a concern. In order to preserve the utility of the RCA, the Quattrone Center and DA executed a Confidentiality Agreement agreeable to both parties.

B. Adverse Event Notification. In this instance, the DA had proactively notified the charged individual, his attorney, and the public of the adverse event before the RCA was conducted, consistent with the goals of transparency and accountability. However, this may not always be the case. Given the potential impact of adverse events upon an investigation or prosecution for both crime victims and suspects, the RCA team should be required to notify all parties who may be affected regarding the adverse event.

C. Personnel Training Necessary to Conduct RCA. By becoming proficient at identifying, investigating and solving problems leading to adverse events, prosecutors will ultimately need to conduct fewer investigations. However, an RCA that is not conducted properly may cause inadvertent blame of individuals rather than identifying where a work process has broken down. Such blame will be detrimental to encouraging participation in the root cause analysis process. Thus, training and understanding of potential obstacles is vital. A study that evaluated an aggregated group of RCAs in the healthcare setting identified lack of time (55%), unwilling colleagues (34%) and interprofessional differences (31%) as the top three barriers to RCAs.[5] Each of these barriers can be addressed, at least in part, by experienced facilitation and support from senior management within a prosecutor's office. The Quattrone Center acted as a facilitator for this RCA by providing the expertise and techniques necessary to conduct a proper review. This DA was provided sufficient assurances to permit the RCA and subsequently adopt its recommendations; those assurances should also allow the RCA to serve as a repeatable process.

11. <u>Program Costs</u>. The costs related to an RCA can vary depending on the complexity and nature of the particular adverse event(s). For most criminal cases, however, the reviews can be conducted rather quickly and efficiently by a small RCA team that has been trained in the principles of conducting a "just culture" event review. In this instance, we estimate that work effort consisted of:

[5] Bowie, Paul, Skinner, J. and de Wet, C. *Training health care professionals in root cause analysis: a cross-sectional study of post-training experiences, benefits, and attitudes.* BMC Health Services Research 2013, 13:50.

A. Investigation. DA personnel spent an undeterminable number of hours performing RCA related work; the Quattrone Center team spent 12-15 hours.

B. Evaluation. The Quattrone Center RCA team spent approximately 10 additional hours evaluating, identifying and discussing potential contributory factors, including presentation to office personnel.

C. Reaction. DA personnel spent additional discussing the recommendations, which should be implemented, and implementation issues.

Additional costs may vary and may include the expense necessary to engage experts to perform RCA training, to review specific elements relating to the event, and/or to educate prosecutors on "best practices" that have been effectively deployed by other jurisdictions.

12. Impact. The DA considers RCA to be a highly effective and valuable resource that has served to generally improve office performance. It has provided significant short-term benefits, and is likely to result in significant long-term benefits, not only to the DA but to all individuals within the criminal justice system, at a minimal cost.

In the short term, the RCA provided a resource for the DA to promote the principles of transparency and accountability, and provided an additional foundation to support public confidence regarding the accuracy and reliability of criminal prosecutions. Over the medium term, the RCA has led to the creation of new staff positions and practices that should, over time, promote accuracy and reliability and thereby serve to improve justice for all. DA personnel are committed to the "just culture" described in this paper, and have agreed with the Quattrone Center to measure the impact of these measures, and to repeat the RCA process as necessary to ensure proactive review and consistent self-improvement even in the absence of negative events.

13. RCA Limitations. While this RCA addressed a number of issues, it was not possible to fully explore every learning or RCA precept in this individual instance. The investigation focused only upon the DA's Office, and was primarily conducted by DA personnel, which could allow potential bias in the facts that formed the basis of the RCA recommendations.

RCA interviews are in general more susceptible to recall bias (that is, the preconceived notions of error held by the investigators in a review of a historical event where the negative outcome is already known). In addition, involved personnel might relate what they thought was the "right" answer (i.e., the response desired by the interviewer, or by management), rather than workflow as actually practiced. For this and other reasons, participation should be voluntary and no individually identifiable participant information is recorded.

To solve the widest range of issues, RCAs should include involved personnel as team members for insight regarding the error. Participants may add important viewpoints regarding the sustainability and effectiveness of proposed RCA solutions. There is evidence that staff members attribute effectiveness and sustainability to those solutions involving training, policy, and compliance. [6] It may be that the effectiveness is more a perception, and such recommendations for implementation require considerable administrative resources. Direct workflow observations and cost-benefit analyses may be required to assess the feasibility of recommended reforms. Lastly, to be truly effective, RCAs should be conducted expeditiously. The ideal in some healthcare settings is within seven days. Analyses temporally distant from errors are more likely to introduce errors in memory, relevance, and incentives to improve.

14. <u>Lessons Learned.</u> The RCA is a process that requires a culture of openness, honesty, transparency, accountability, and a willingness to embrace the concept that as humans, we will inevitably makes mistakes – what is important is learning from, rather than repeating, those mistakes. As organizational management guru James Reasons has said, "We cannot change the human condition, but we can change the conditions in which humans operate." With that in mind, the following lessons are important when participating in an RCA.

A. Independence. It is important that the individuals conducting the RCA have no role in punishment or discipline of the individuals who participated in the events leading up to the adverse event being reviewed, and that any such actions take place separate and apart from the RCA. It is useful to have the RCA team consist of outsiders not connected to the Office, who lack any potential bias or pre-conceived notion of how the adverse event occurred or why.

B. Training. It is important to have the RCA team educate and inform all participants in the RCA about its underlying principles and methods. These messages will need to be reinforced often throughout the investigation, as it is easy for participants within the criminal justice organization to be skeptical about the concept of a "just culture event review" as opposed to an internal investigation whose primary purpose is blame and punishment.

C. Leadership. The implementation of an RCA, and the willingness to openly and objectively review and implement useful recommendations for improvement, requires a culture of honesty and focus on self-improvement that must be displayed by office leadership. Furthermore, the concept of a "just culture" that appropriately balances the

[6] A. Zachary Hettinger, Rollin J. Fairbanks, Sudeep Hegde, Alexandra S. Rackoff, John Wreathall, Vicki L. Lewis, Ann M. Bisantz, Robert L. Wears, *An evidence-based toolkit for the development of effective and sustainable root cause analysis system safety solutions* 33 (2) J HEALTHCARE RISK MANAGEMENT 11, 18-19 (2013).

protection of hard-working staff engaged in good-faith prosecutorial practice with the need to ensure that intentional or reckless misconduct is appropriately addressed is uniquely the province of Office Leadership, and this delicate balance must be clearly maintained and communicated to all employees throughout the office to ensure their vigilance on these essential issues.

15. **Conclusion.** The RCA process developed in other professions (such as healthcare, aviation, and fire prevention) has the potential to produce an effective and sustained improvement within the criminal justice system to improve accuracy and reliability, thereby promoting overall integrity and justice for all. The process starts with the differing insights and experiences that a group of individuals brings to bear, including those with intimate knowledge of daily workflows. The RCA team must be committed to exploring the systems-level factors that created the hazardous environment, but with an appreciation of *Just Culture*[7] when evaluating the individuals who were involved with a given event.

    This RCA may serve as a blueprint for analysis of errors in many criminal justice settings to determine what effective and sustainable learning can be identified and implemented to reduce future investigative or prosecutorial errors. Identifying and engineering system-level factors may prevent error-prone situations, creating sustainable and effective change to enhance and ensure the fair administration of justice.

[7] Dekker S. JUST CULTURE: BALANCING SAFETY AND ACCOUNTABILITY. (Ashgate; 2007).