



QUATTRONE CENTER

for the Fair Administration of Justice


Guidelines for the Use of Root Cause Analysis (RCA) to Reduce Error and Improve Quality in Forensic Science Laboratories



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The Quattrone Center



The Quattrone Center is a national research and policy hub created to catalyze long term structural improvements to the US criminal justice system

A SYSTEMS APPROACH TO
ERROR REDUCTION IN CRIMINAL JUSTICE

John F. Hollway

February, 2014



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Errors in Forensic Science Labs

POLITICS

— Crime and Justice, Top Stories

Forget CSI: Real-Life Crime Labs Are a Total Mess

The recent missteps of lab techs include analyzing, forging test results, and citing

—By **Rebecca Cohen** | Mon Apr. 20, 2015 6:00 A

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Never-ending scandal: Will we ever fix HPD's crime lab?

HOUSTON CHRONICLE Published 5:30 am, Thursday, August 18, 2011

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The Washington Post

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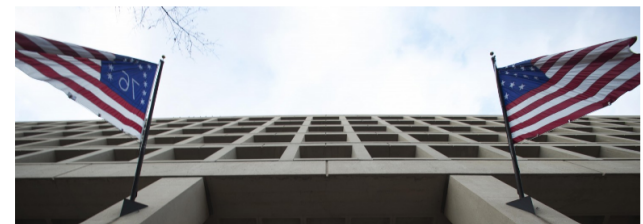
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FBI admits flaws in hair analysis over decades

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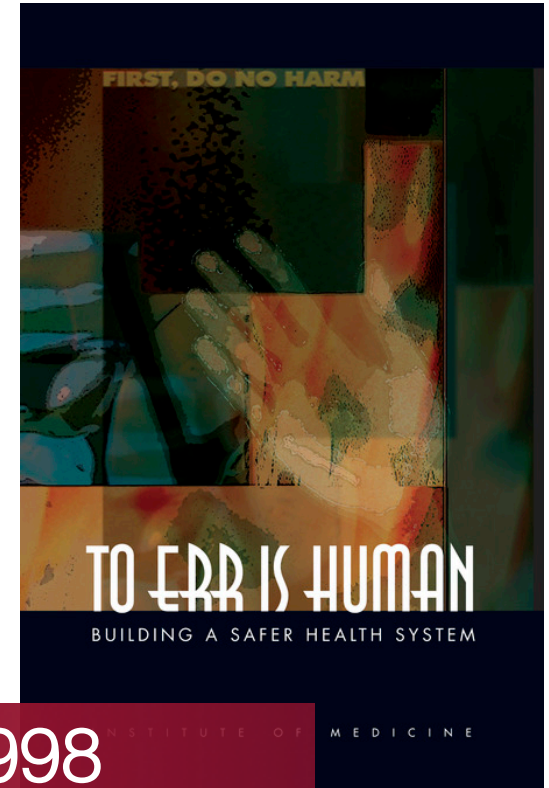
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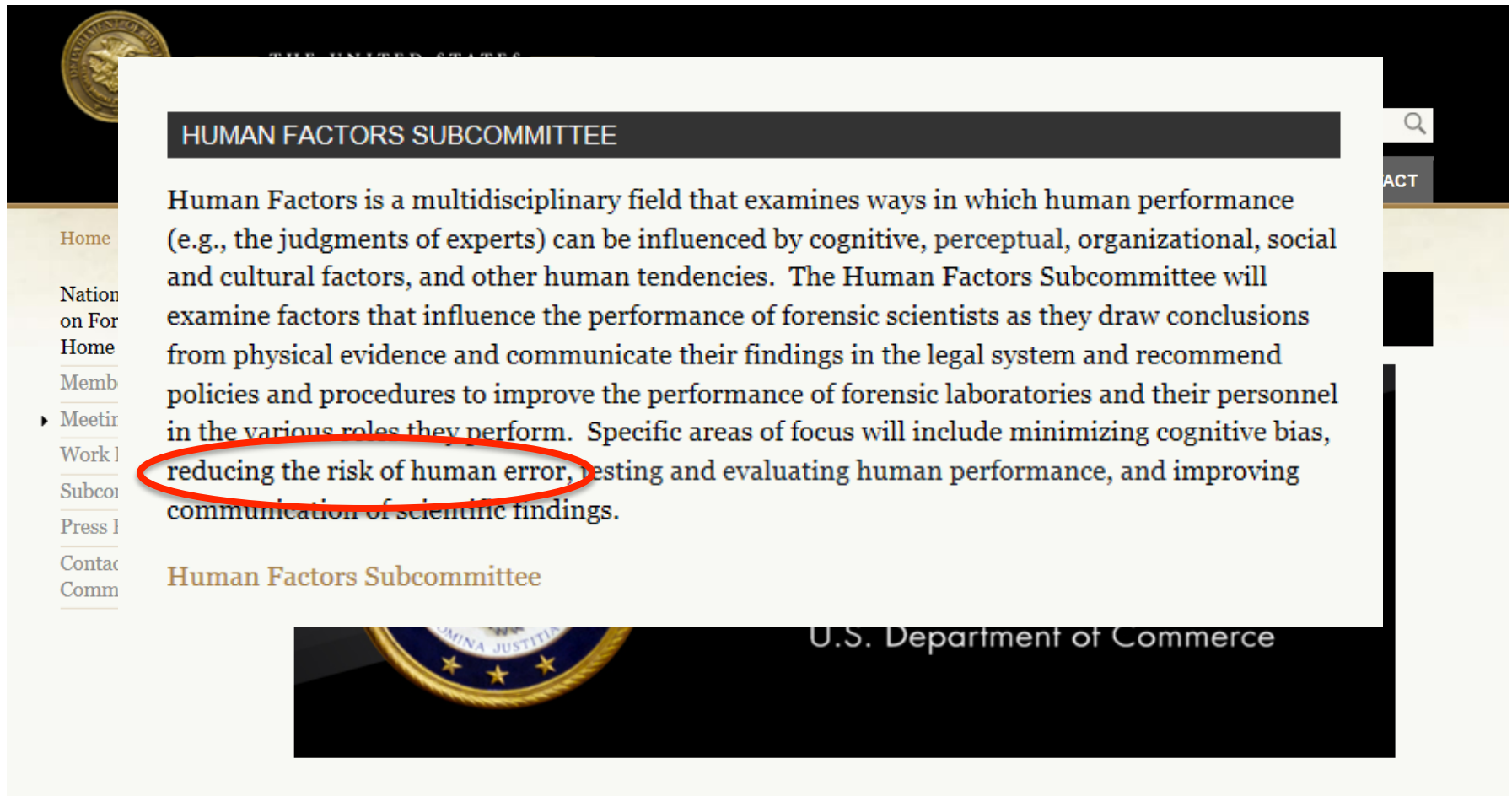
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To Err Is Human

“Errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.”



Nat'l Commission on Forensic Science



The screenshot shows a website page for the Human Factors Subcommittee. At the top left is the seal of the U.S. Department of Commerce. Below it is a navigation menu with links: Home, Nation on For Home, Memb, Meetir, Work], Subco, Press I, Contac, and Comm. The main content area has a dark header with the text "HUMAN FACTORS SUBCOMMITTEE". Below this is a paragraph of text: "Human Factors is a multidisciplinary field that examines ways in which human performance (e.g., the judgments of experts) can be influenced by cognitive, perceptual, organizational, social and cultural factors, and other human tendencies. The Human Factors Subcommittee will examine factors that influence the performance of forensic scientists as they draw conclusions from physical evidence and communicate their findings in the legal system and recommend policies and procedures to improve the performance of forensic laboratories and their personnel in the various roles they perform. Specific areas of focus will include minimizing cognitive bias, reducing the risk of human error, testing and evaluating human performance, and improving communication of scientific findings." The phrase "reducing the risk of human error" is circled in red. Below the text is a sub-header "Human Factors Subcommittee" and a footer with the U.S. Department of Commerce seal and the text "U.S. Department of Commerce".

HUMAN FACTORS SUBCOMMITTEE

Human Factors is a multidisciplinary field that examines ways in which human performance (e.g., the judgments of experts) can be influenced by cognitive, perceptual, organizational, social and cultural factors, and other human tendencies. The Human Factors Subcommittee will examine factors that influence the performance of forensic scientists as they draw conclusions from physical evidence and communicate their findings in the legal system and recommend policies and procedures to improve the performance of forensic laboratories and their personnel in the various roles they perform. Specific areas of focus will include minimizing cognitive bias, **reducing the risk of human error**, testing and evaluating human performance, and improving communication of scientific findings.

Human Factors Subcommittee

U.S. Department of Commerce

Procedure for NCFS Recommendations on RCA

1. 1st Draft - Interim Solutions Subcomm.
 - HF Subcomm. permitted review/comment
 - Public comments received, reviewed
2. Presentation of draft to full Commission
 - Add'l public comments received, reviewed
3. 2nd draft – Interim Solutions Subcomm.
- 4. Publication for comment by 7/27/2015**
 - <http://www.justice.gov/ncfs/meetings>
5. Presentation to full Commission for vote 8/10/2015
6. Recommendations to U.S. Atty Gen

Corrective Action in Forensic Science

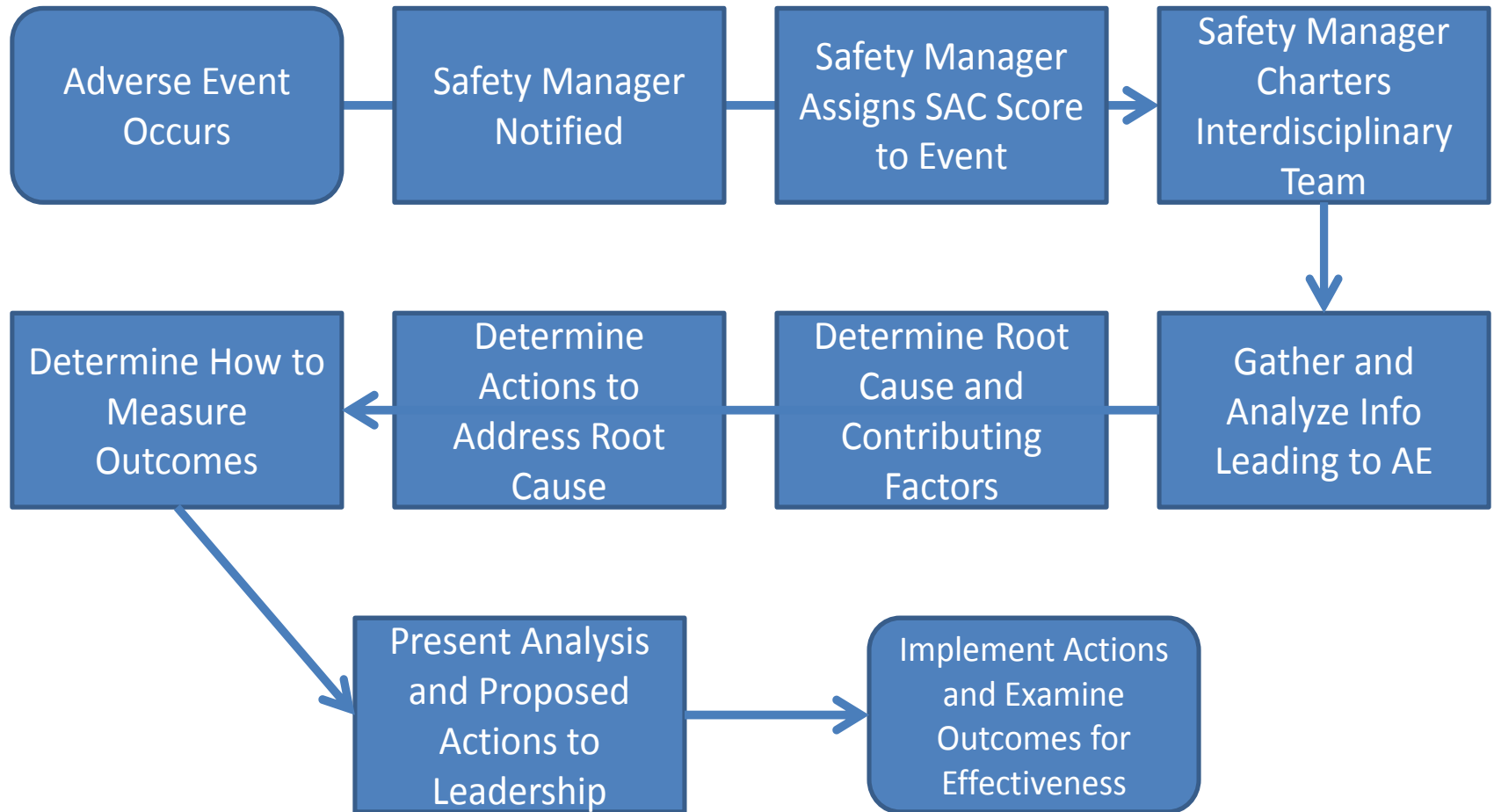
- Required by ISO 17025
 - Labs shall implement corrective action for **all** nonconforming work or departures from policies/procedures (4.9)
 - Procedure begins with an investigation to determine the root cause(s) of the problem. (4.11.2)

RCA: A Learning Tool

- Create team to review nonconformity, identify core causative factors
 - “Why?” not “who?”
- Create action plan to prevent recurrence
- Identify necessary system/process redesign, improvements to reduce risk
- Conducted in a **blame-free manner**

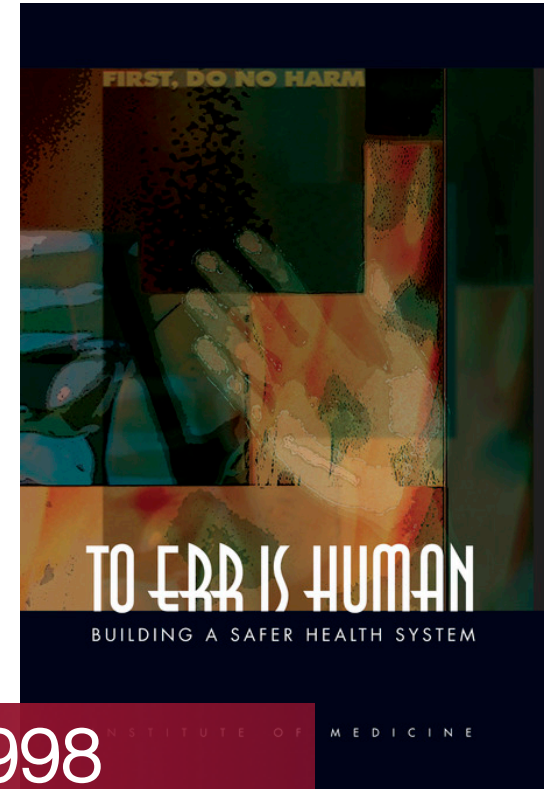


Sample RCA Process: VHA



A “Just Culture” Is Essential

“People still must be vigilant and held responsible for their actions. But when an error occurs, blaming an individual does little to . . . prevent someone else from committing the same error.”



When to Conduct RCA

		Severity			
		Catastrophic Systemic errors in procedure that affect several outcomes or reported results; intentional misconduct or recklessness in execution of role	Major Casework or proficiency test error that affects outcome or reported result. Potential problems that may affect the reliability, accuracy or performance of a test procedure or policy; serious negligence in execution of role	Moderate Clerical nonconformity affecting result but corrected during the review process prior to reporting; nonconformity that does not affect outcome or reported result	Minor Clerical nonconformity that does not affect outcome or reported result
Probability	Frequent Likely to occur multiple times in 1 year	3	3	2	1
	Occasional May occur several times in 1-2 years	3	3	2	1
	Uncommon May happen once in 2-5 years	3	2	1	1
	Remote May happen once in 5+ years	3	2	1	1

RCA Required for 3, Recommended for 2, Optional for 1

“Near Miss” = Nonconformity

- Nonconformity with potential to cause damage; damage prevented through a fortuitous intervention
- Should be evaluated in the same way they would be if the injury had actually occurred

• Emotionally easier “teachable moment”



Recurring Nonconformity

- Assess extent of nonconformity
- Re-analyze & address additional cases
- Communicate nonconformity to affected internal/external individuals

The Washington Post

Search

Public Safety

FBI admits flaws in hair analysis over decades



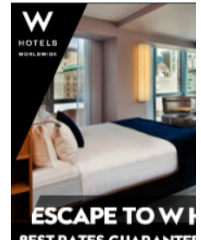
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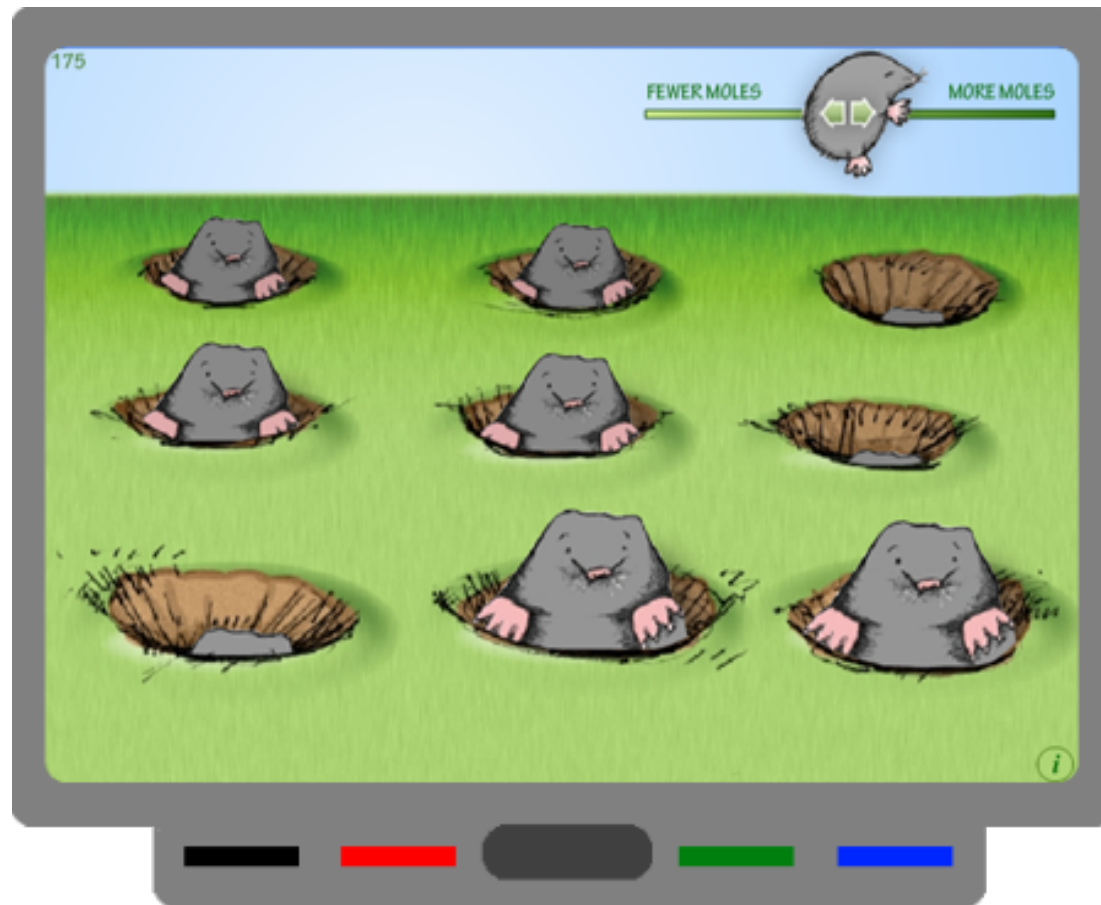


Transparency and “Safe Harbor” to Incent RCA

- Goals: promote both transparency and incentives that encourage RCA
- Anonymization
 - Discipline is private
- Use immunity
 - No punishment from participating
- Limit use in civil discovery



RCA: Culture of Constant Quality Improvement





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