

# CERIAS

The Center for Education and Research in Information Assurance and Security

Principal Investigators: Melissa J. Dark, *Purdue University*, John A. Springer, *Purdue University*; Students: Jackson Harter, *DePauw University*, Michael Smith, *City University of New York*



## Assessing Security of Protected Health Information for Information Systems

Graduate Students:  
Di Jin, *Purdue University*  
Amber Johnson, *Purdue University*

### Purpose:

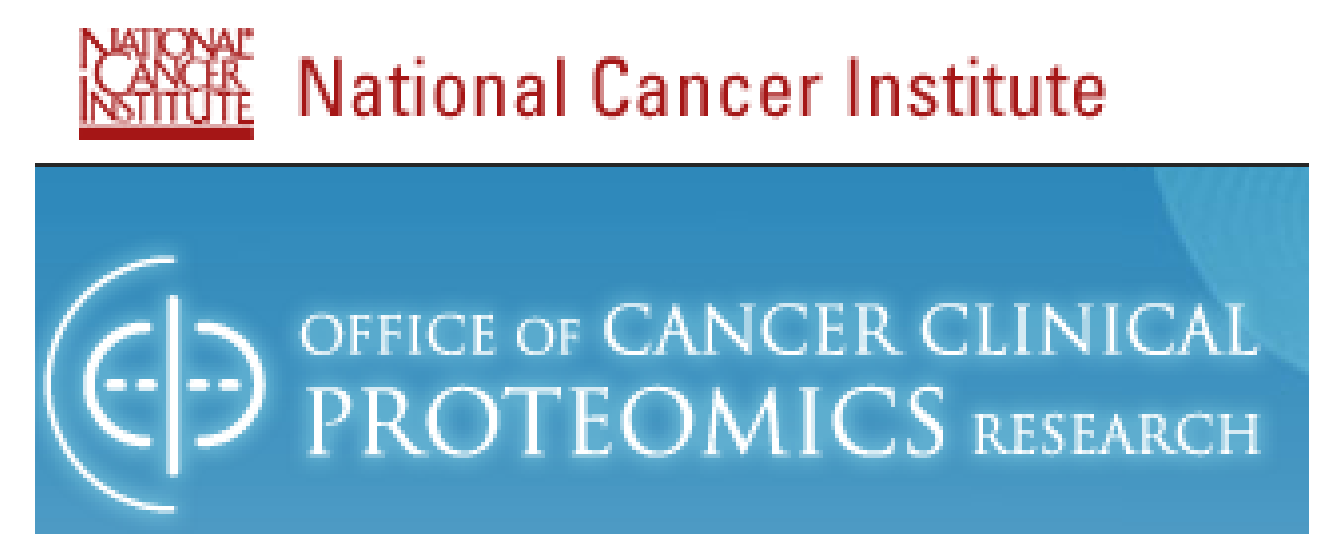
to reveal unaccounted for vulnerabilities in information systems and assure the protection of protected health information

### Data Breaches:

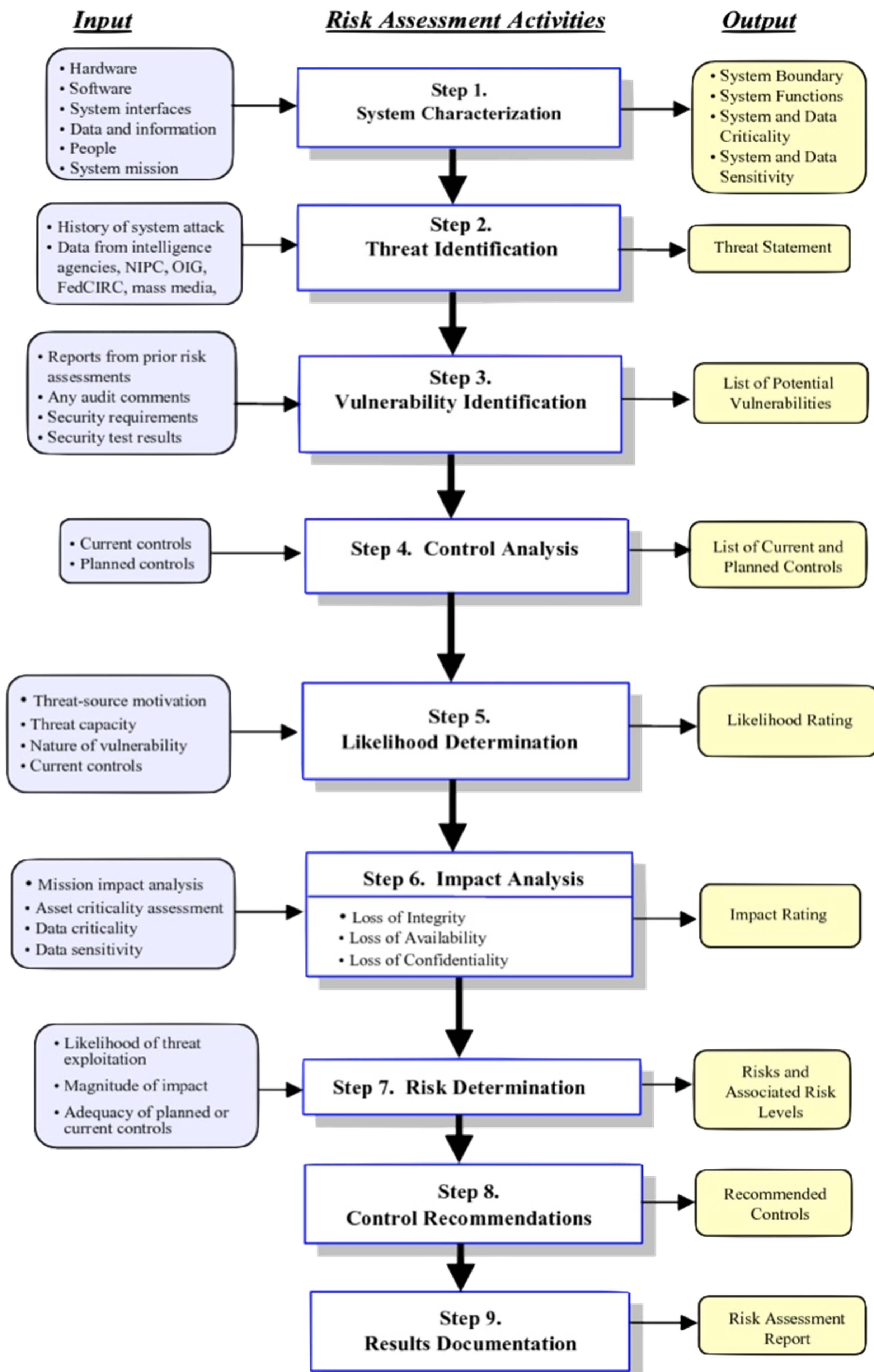
- University of North Carolina at Chapel Hill
  - 100,000 women affected
- Presbyterian Anesthesiology Associates
  - 10,000 patients affected



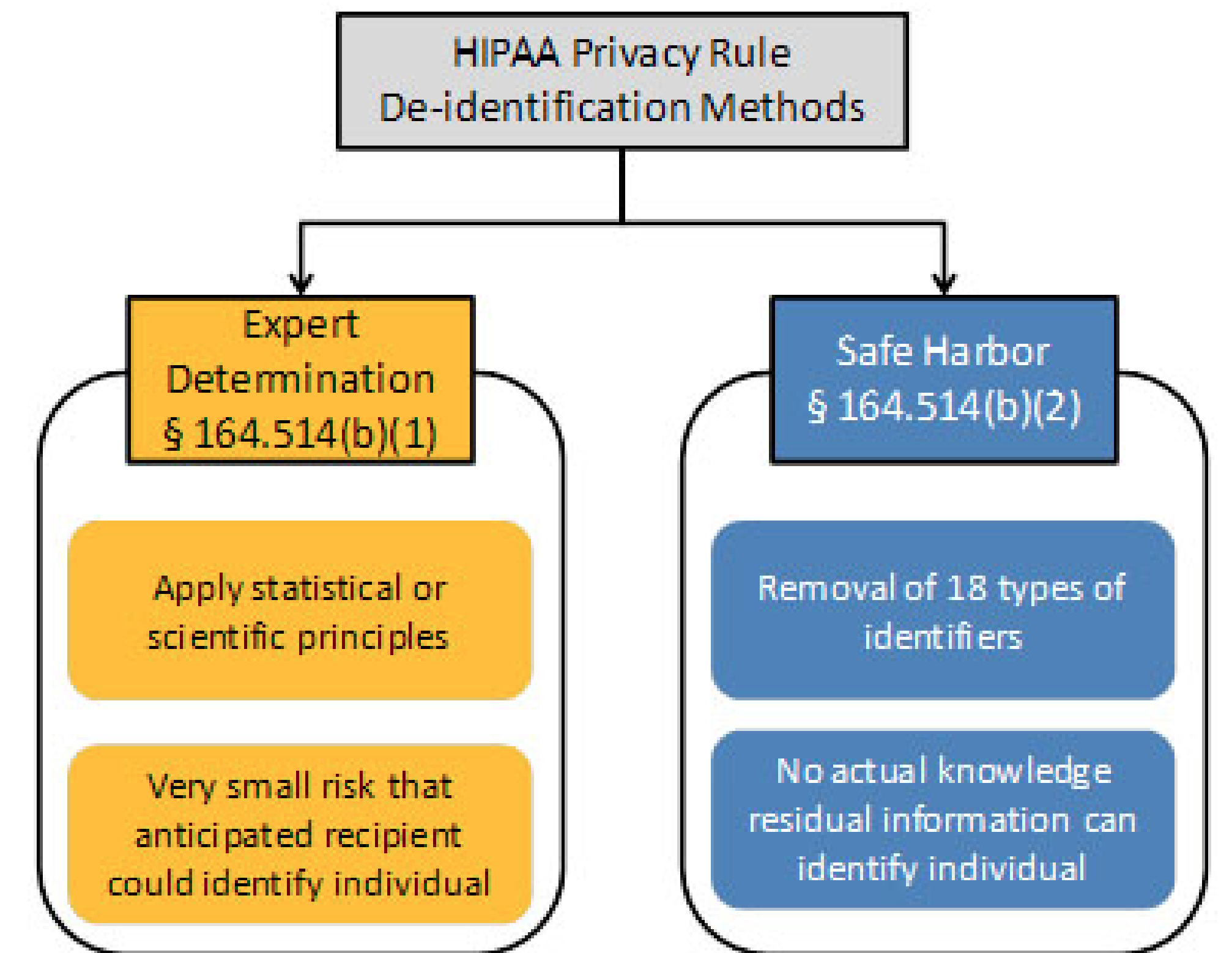
Protected Health Information



### NIST 800-30:



Risk Assessment Methodology Flowchart



### Results:

	Categories	Critical Elements		
		1	2	3
MANAGEMENT CONTROLS	1. Risk Management	0.2	0	
	2. Review of Security Controls	0.2	0	
	3. Life Cycle	0.917	0.615	
	4. Authorize Processing	0.375	1	
	5. System Security Plan	1	0	
	<b>TOTAL</b>	<b>0.431</b>		
OPERATIONAL CONTROLS	6. Personnel Security	0.857	0.75	
	8. Production, Input/Output Controls	1	0.857	
	9. Contingency Planning	1	0.6	0
	10. Hardware and System Software Maintenance	1	0.846	1
	11. Data Integrity	0	0.375	
	12. Documentation	0.625	0	
	13. Security Awareness, Training, and Education	1		
	14. Incident Response Capability	1	0.333	
		<b>TOTAL</b>	<b>0.664</b>	
TECHNICAL CONTROLS	15. Identification and Authentication	0.769	0.769	0.769
	16. Logical Access Controls	0.7	0.7	0.7
	17. Audit Trails	0.667	0.667	0.667
	<b>TOTAL</b>	<b>0.856</b>		
<b>Overall Total</b>		<b>0.650</b>		

Very Weak	0-20
Weak	21-45
Moderate	46-60
Strong	61-80
Very Strong	81-100



This material is based upon work supported by the National Science Foundation under grant #1062970. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

