Central Cancer Registry:

Documenting the Security of your Information Technology (IT) Infrastructure

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Data Security – Why is it important?

- **Cancer registry data contains Personally Identifying Information (PII) that can be used for illicit purposes**
  - *Identity theft*
- **A person's medical history can be used to**
  - *obtain prescription medication fraudulently*
  - *embarrass or blackmail the person*
  - *increase insurance premiums*
- **Health care providers could use this breached data**

Data Owner Responsibility

- Protect Data
- Apply Software Patches
- Implement Multiple Levels of Security
- Audit and Penetration Tests
- Monitor Database Activity
- Implement Database Intrusion Detection
- Encryption:
  - *Data At Rest (DAR)*
  - *Data in Motion (DIM)*
  - *Data In Use (DIU)*

Planning for Data Security

- Who has access to the databases?
- How are administrative passwords stored?
- What are the policies for auditing system security and looking for suspicious activity?
- What is the procedure if security is breached?

Developing a Security Policy

- Designate a Chief Technology Officer (CTO)
- Find out if you have a security policy
- Develop a security policy
- Execute the policy
- Review and update the policy

Risk Assessment and Management (Part 1)

- **Security Document with Standards from—**
  - *The National Institute of Standards and Technology (NIST)*
  - *Federal Information Processing Standard 140 (FIPS)*
  - *The North American Association for Central Cancer Registries (NAACCR) Standards for Cancer Registries Volume III, chapter 6, "Security and Confidentiality"*
  - *Certification and Accreditation Process Guide, as referenced in the CDC Unified Process*

The Security Document

- Risk assessment and management
- Networking and privacy security policies
- Encryption of data on mobile services and portable media
- Plans for encryption of data in databases
- Disaster recovery plans
- Ongoing security training
- Audit security policies regularly
- Review and update the security document

What does CDC Provide?

- **Certification and Accreditation (C&A) on all systems deployed within CDC**
- **All registry products created by CDC have passed the CDC C&A processes**
- **Checklists details how CDC or the administrator addresses the National Institute of Standards and Technology (NIST) requirements**
  - *This model might be used to assist in meeting the data sharing requirements in Memorandum of Understanding (MOU)'s and Authorization to Operate (AtO)'s*
  - *Provides a general understanding of data security and how to address Memorandum of Understanding (MOU)'s and Authorization to Operate (AtO)'s to obtain cancer registry data sharing agreements*

What is the CDC Certification and Accreditation (C&A) Process

- Security certification is a comprehensive evaluation of CDC's management, operational, and technical security controls for an information system
- Security accreditation is CDC management's official decision to authorize an information system to operate

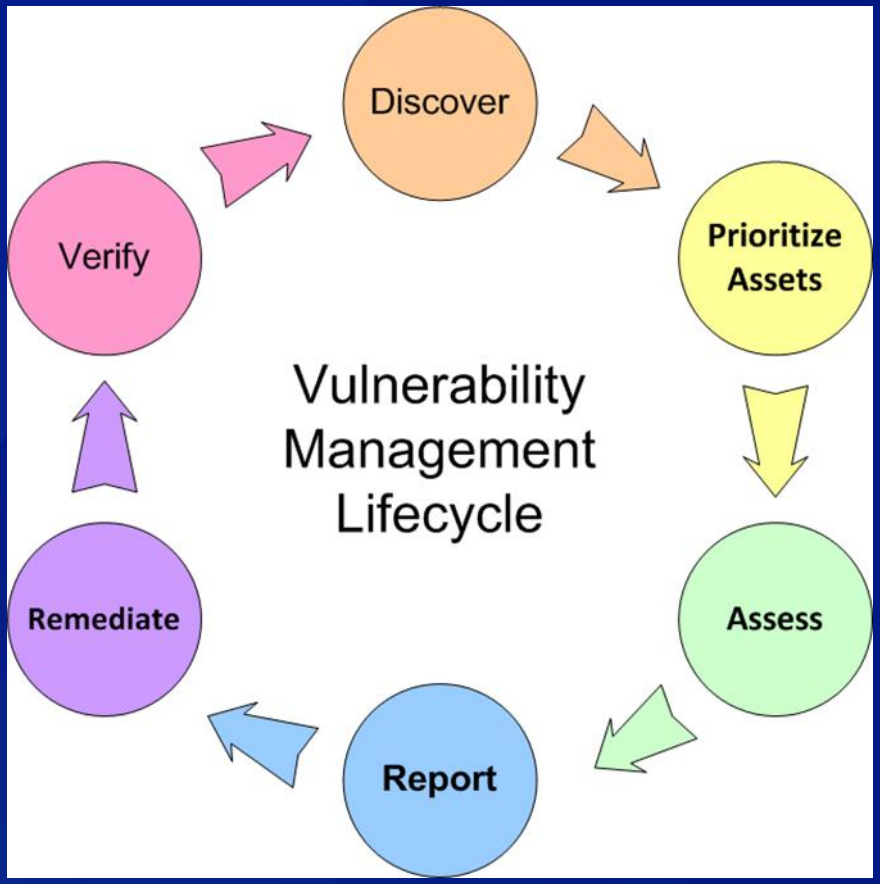
What is a Data-Sharing Agreement?

- Obtaining data sharing agreements
- Data sharing agreements provide a level of assurance
- Documentation that the requesting organization has addressed National Institute of Standards and Technology (NIST)-required minimum security
- Memorandums Of Understanding (MOU) and Authority to Operate (AtO) agreements

Internal Audit

- Achievement of the parent organization's objectives
- Appropriate assessment of risk
- Reliable internal and external reporting
- Compliance with applicable laws and regulations
- Compliance with NPCR's standards for the registry

Vulnerability Management Life Cycle - Diagram



Federal Information Processing Standards (FIPS) Security Levels

- **FIPS 140-2 defines four levels of security—**
  - *FIPS 140-2 Level 1:*
    - *lowest level*
  - *FIPS 140-2 Level 2:*
    - *requirement for tamper-evidence*
  - *FIPS 140-2 Level 3:*
    - *physical security mechanisms*
  - *FIPS 140-2 Level 4:*
    - *highest level of security*

Conclusion

- **How to address and document the security of the Information Technology (IT) Infrastructure**
- **Sources provide successful methods**
- **Data Security should not be "only" used to address the outside organizations directives**
  - *Protect image of Central Cancer Registry's (CCR)*
  - *Future funding*

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