



NCHS Virtual Data Enclave (VDE): Project Update

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BSC Meeting; DMI Session

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Virtual Data Enclave (VDE)

- Approved researchers log into a secure, remote server to access and analyze restricted-use data from their remote location.
- The approved remote location is the researcher's employer facility.
- The researcher does not travel to a physical data enclave (i.e., RDC) for data access.
- The VDE is designed to prevent unauthorized disclosure of restricted-use data.

VDE IT System Security

- The NCHS VDE is hosted on NIOSH servers in Atlanta CDC HQ.
- NIOSH servers have an authority to operate (ATO) at the moderate level.
- Restricted-use data is encrypted at rest on NIOSH servers.
- NCHS data has its own volume on NIOSH servers – no commingled data.
- Connection between NIOSH server and researcher's computer is encrypted.
- Researchers use two factor authentication for login.
- NIOSH employees and contractors are CIPSEA* agents.
- VDE system logs are used to monitor researcher activity.

* Confidential Information Protection and Statistical Efficiency Act (CIPSEA) of 2018 (Title III of the Evidence Act; 44 U.S.C. 3561-3583)

VDE Security

- Data download and copy/paste function disabled.
- No printing available.
- No Internet access.
- No email access.
- Certain Windows programs deleted (e.g., Snipping Tool, Command prompt, Remote Desktop, Internet browsers and PowerShell).
- Other disclosure risks are controlled through a Data Use Agreement (DUA) between NCHS and researcher's employer:
 - E.g., no photos or recording of data as displayed in VDE.
- NCHS staff review researcher output for disclosures before release.

Motivation for VDE

- For NCHS, it adds a tier of data access as per the Evidence Act.*
- Operates almost 24/7 – data access is not limited by pandemics, extreme weather, or civil unrest.
- Allows researcher flexibility in managing their project schedule – not limited to business days/times.
- Decreases cost to researchers: reduced travel, no background investigation.
- Data access available to a new group of researchers.
- Uses existing CDC enterprise services through the National Institute for Occupational Safety and Health (NIOSH).

* See 44 U.S.C. 3563 and 44 U.S.C. 3582(a)

VDE 2-year Project Overview

- Procured DMI start-up funds; kick-off meeting with NIOSH; onboarded contractors.
- NCHS Director approved VDE.
- Built secure method of uploading CIPSEA protected data.
- Built secure method of downloading researcher output.
- Built interface for external researcher login.
- Moved VDE onto production servers.
- Built a help desk.
- Data Access Agreement between NCHS and NIOSH for hosting CIPSEA protected data.
- Completed final testing of VDE requirements and security.
- Invited pilot projects to onboard.
- Onboarded pilot projects (signed DUAs and inspected access sites); account setup.

Resolving VDE Challenges

- VDE has additional disclosure risks compared to physical data enclaves:
 - Data Use Agreement used between NCHS and researcher employer to set data security requirements and reduce risk.
- If demand is greater than supply, then RDC staff will schedule researcher use of virtual machines.
- Operational cost of VDE for FY24 is \$370k.
- Fees for using the VDE are the same as using the RDC.
- Researchers appreciate how the VDE desktop is just like workstations in the RDC.

VDE Operational Status (Phase I)

- CDC employees -
 - VDE is fully operational.
 - Four projects active (i.e., NCCDPHP², NCEH, NCIRD).
 - Cleared output sent to researchers.
 - Working to onboard six other CDC projects.
- Other federal employees -
 - VDE is fully operational.
 - One active project (i.e., FDA).
 - Cleared output sent to researchers.
 - Working with HUD to onboard.

VDE Next Steps

- Phase I
 - CDC employees - working to identify other CDC based projects for onboarding.
 - Other federal employees - actively recruiting Federal based projects to onboard.
- Phase II
 - All non-federal researchers - identify other researchers for VDE access by late spring.

VDE Future

For discussion:

- Guidance on rolling-out VDE availability to non-federal researchers:
 - Existing projects.
 - New projects.