"Do Staff Know What They Think They Know?" A Cybersecurity Knowledge Assessment at VDH

Lauren Smith | Pittsylvania-Danville Health District | Cohort 4, 2026

99% Training completion rate at VDH

89% Felt confident identifying phishing emails

53% Caught the hardest phishing scenario

62% Admitted to already failing a phishing email

ISSUE / GAP IDENTIFIED

- VDH maintains a 99% security training completion rate. However, completion alone does not measure whether staff can recognize and respond to real threats.
- New technology rollouts including electronic health records (EHR) and AI tools create additional risks.
- Real-world threats staff must recognize:
  -Phishing
  -Social Engineering
  -Ransomware

METHODS / OUTPUTS

METHODS
Review existing VDH training and consulted Chief Information Security Officer (CISO) and IT staff.

KNOWLEDGE ASSESSMENT
27-question survey covering phishing, ransomware, HIPAA, and self-assessment confidence.

PHISHING EMAIL SCENARIOS
12 mock email scenarios, from obvious threats to legitimate-looking messages, to test awareness.

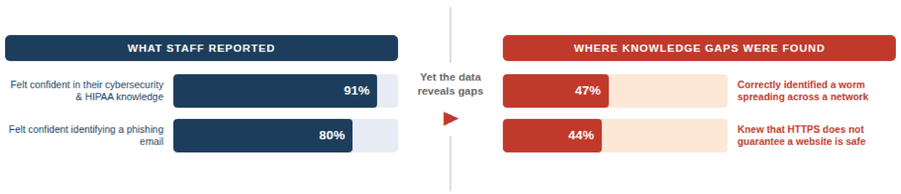
CHALLENGES

- Phishing simulation data is managed by VITA and not directly accessible.
- Limited access to data as an intern.
- Survey participation dependent on staff availability and willingness.
- Phishing scenarios were designed using fictional domain. Staff awareness of the assessment context may have influenced detection rates beyond what would occur in real world conditions.

OUTCOMES

The Confidence Gap — What Staff Reported vs What the Data Shows

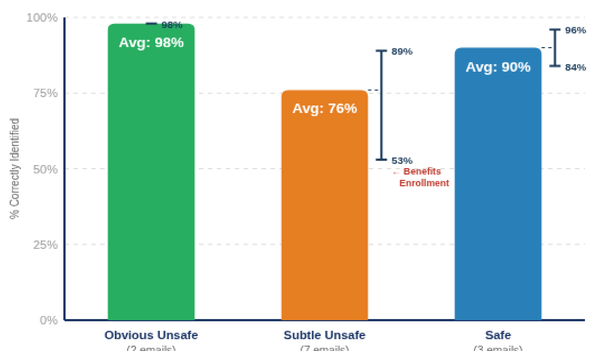
Self-reported confidence compared against actual performance on knowledge questions (n=45)



Key Finding: While **91%** of staff felt confident in their cybersecurity knowledge and **80%** felt confident identifying phishing emails — actual performance revealed critical gaps. Only **47%** could correctly identify a worm spreading across a network, and just **44%** knew that HTTPS does not automatically mean a website is safe. This disconnect between perceived confidence and demonstrated knowledge is a central finding of this assessment.

Phishing Email Identification Rate by Category

Average correct identification rate by email group (n=45). Error bars show the min–max range within each category.



KEY FINDING

Staff correctly identified **Obvious** phishing emails at an average of **98%** — but performance dropped significantly for **Subtle** phishing emails, averaging just **76%** with a range spanning from **53% to 89%**. This 45 percentage point gap demonstrates that sophisticated phishing attacks remain a critical vulnerability. **Safe** emails were correctly identified at an average of **90%**, showing staff can generally recognize legitimate emails.

NOTABLE

Even when staff were primed to look for suspicious emails, a plausible domain variation went unnoticed by nearly half of respondents — reflecting the challenge of maintaining consistent vigilance in a busy work environment.

What Would Make Security Training More Useful?

Based on open-ended survey responses from assessment participants (n=27 responses out of 45 total participants)

33% REAL WORLD & JOB-SPECIFIC EXAMPLES
Staff want scenarios that reflect their actual daily work

22% MORE PRACTICE & SIMULATIONS
Beyond annual training — hands on practice opportunities

19% SIMPLER LANGUAGE & PLAIN ENGLISH
Technical jargon remains a barrier to understanding

15% PRACTICAL RESOURCES & REFERENCE GUIDES
Checklists and visual guides to reference day to day

11% MORE FREQUENT & LESS REDUNDANT TRAINING
Shorter more frequent sessions rather than annual modules

"Understanding the verbiage would help tremendously."
PLAIN LANGUAGE THEME

"Having a visual guide with common phishing email examples like listed above would be awesome."
PRACTICAL RESOURCES THEME

"Use examples related to what we do. Show good examples of a real phishing or unsafe email so people are aware of the items that make it suspicious."
REAL WORLD EXAMPLES THEME

"Gamification of training with simulations beyond test emails."
PRACTICE & SIMULATIONS THEME

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