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Understanding CIA Triads

BLUF: The CIA Triad Confidentiality, Integrity, and Availability is the foundational model for information security, ensuring that data is protected from unauthorized access, remains accurate, and is available when needed. Authentication confirms a user's identity, while authorization determines their access rights. For example, logging into a hospital system (authentication) does not automatically grant access to all patient records, only authorized roles (authorization) can view or edit specific data. Both authentication and authorization are essential to maintaining the principles of the CIA Triad.

The CIA Triad is a foundational model in information security. It stands for Confidentiality, Integrity, and Availability, and is used to guide security policies and controls.

Confidentiality, ensuring that information is accessible only to those who are authorized to see it. Preventing unauthorized disclosure.

Integrity, ensuring that data is accurate, reliable, and has not been altered improperly whether by accident or maliciously over its lifecycle.

Availability, ensuring that information and systems are accessible when needed by authorized users. The systems should function, and data should be available reliably.

These three principles are interconnected; securing one may affect the others, and you often need trade-offs. For example, very strong confidentiality might mean more controls, which can hinder availability if not designed well.