

CompTIA Healthcare IT Technician Objectives

INTRODUCTION

The CompTIA Healthcare IT Technician Exam is a vendor-neutral certificate. While there is no *required* prerequisite, the Healthcare IT Technician is intended to follow CompTIA A+ or equivalent experience.

The CompTIA Healthcare IT Technician certificate will show that the successful candidate has the knowledge and skills required to implement, deploy, and support Health IT systems in various clinical settings. Successful candidates will understand regulatory requirements, healthcare terminology/acronyms, and possess a basic understanding of practice workflow while adhering to code of conduct policies and security best practices.

This examination blueprint includes domain weighting, test objectives, and example content. Example topics and concepts are included to clarify the test objectives and should not be construed as a comprehensive listing of all the content of this examination.

The table below lists the domain areas measured by this examination and the approximate extent to which they are represented in the examination:

Domain	% of Examination
1.0 Regulatory Requirements	13%
2.0 Organizational Behavior	15%
3.0 IT Operations	26%
4.0 Medical Business Operations	25%
5.0 Security	21%
Total	100%

**Note: The lists of examples provided in bulleted format below each objective are not exhaustive lists. Other examples of technologies, processes or tasks pertaining to each objective may also be included on the exam although not listed or covered in this objectives document.

1.0 Regulatory Requirements

1.1 Identify standard agencies, laws, and regulations.

- HHS
- ONC
- CMS
- HIPAA
- Medicare
- Medicaid
- ARRA
- HITECH
- Meaningful use
- Eligible provider
- NIST

1.2 Explain and classify HIPAA controls and compliance issues.

- PHI
- Covered Entity
- Security
- HIPAA Security
 - Violations
 - Fines
 - Requirements
- Release of information
- Access permissions

1.3 Summarize regulatory rules of record retention, disposal, and archiving.

- Documentation requirements
 - Time of storage
- Types of records
 - Public records
 - Private records
 - Legal health record
- Methods of record disposal

1.4 Explain and interpret legal best practices, requirements, and documentation.

- Waivers of liability
- Business Associate Agreements (BAA)
- Third party vendor review and agreements (SLA, MOU)

2.0 Organizational Behavior

2.1 Use best practices for handling PHI in the workplace.

- PC placement
- Privacy screens
- Printer placement
- Screensavers
- Time lockout

2.2 Identify EHR/EMR access roles and responsibilities.

- Medical roles
 - MD
 - RN
 - PA
 - DA
 - PCT
 - MA
 - NUC
 - UA
 - LPN
 - PM
 - Office Mgr.
 - Staff
- Technical roles
 - Security administrator
 - Network administrator
 - System administrator
 - Desktop support
 - Database administrator
- Business Associate Access and Contractor Access
- Access limitations based on role and exceptions
 - Emergency access (break the glass)
- Access based on sensitive patient data
 - Sensitivity labels and clearance

2.3 Apply proper communication methods in the workplace.

- Email
- IM vs. secure chat
- EMR system
- Fax
- Secure FTP
- Phone

- VoIP

2.4 Identify organizational structures and different methods of operation.

- Organizational Structures:
 - Hospital
 - Private practice
 - Nursing homes
 - Assisted living facilities
 - Home healthcare
 - Hospice
 - Surgical centers
- Methods:
 - Differences in scope of work
 - Availability of resources
 - Formality of procedures

2.5 Given a scenario, execute daily activities while following a code of conduct.

- Communicate in a professional fashion
- Adapt procedural behavior according to different situations and environments
- Imaging room
 - Procedural room
 - Recovery room
 - Examination room
 - Float room
 - Emergency room
- Adapt social behavior based on sensitivity of the environment
- Use proper sanitation steps – follow medical precautionary guidelines
- Conform to requirements set forth by project manager

3.0 IT Operations

3.1 Identify commonly used IT terms and technologies.

- Protocol terms:
 - TCP/IP
 - DNS
 - DHCP
 - FTP
 - Wireless (802.11x)
 - RDP
- Devices:
 - Switch
 - Domain controller
 - Printer server
- Industry terms:
 - ASP

- ISP
- Client-server model
- Mainframe
- Cloud Computing
- Virtualization
- Terminal services
- APIs
- Fiber
- Languages:
 - XML
 - SQL
 - HTML
 - Flash
 - PHP
 - ASP

3.2 Demonstrate the ability to setup a basic PC workstation within an EHR/EMR environment.

- Basic installation, configuration and maintenance procedures
- Basics of operating systems, mouse, keyboard, monitor and applications

3.3 Given a scenario, troubleshoot and solve common PC problems.

- Malfunctioning hardware
 - Mouse
 - Printer
 - Power
 - Monitor
 - Cables
- Software patches/hotfixes/updates
- Documentation

3.4 Install and configure hardware drivers and devices.

- Imaging devices:
 - Barcode scanner
 - Document scanner
 - Card/badge scanner
 - Fax printer
 - Camera
 - Signature pads
- Physical interfaces:
 - USB
 - IEEE 1394
 - SCSI
 - Serial
 - Bluetooth

- Mobile storage devices:
 - Flash drives
 - External hard drives
 - DVDs
 - CDs
 - Tapes
 - SD cards
- Mobile devices:
 - Tablet PCs
 - Smart phones
 - Portable media players

3.5 Compare and contrast basic client networks and tools.

- DHCP vs. static IP
- Adhoc vs. infrastructure
- Command line prompts
 - ping
 - ipconfig
 - tracert

3.6 Setup basic network devices and apply basic configuration settings.

- Wireless access point
 - Security settings
 - SSID
 - Guest network
 - Access point placement
- Router
 - DHCP
 - Port forwarding
- Internet modem

3.7 Given a scenario, troubleshoot and solve common network problems.

- Cabling
- Power
- IP settings
- ISP
- Interference
- Signal issues

3.8 Explain the features of different backup configurations and the associated maintenance practices.

- Daily
- Differential
- Incremental
- Archive flags

3.9 Classify different server types, environments, features, and limitations.

- Database server
- Application server

- Interfaces
- Physical connections
- Server load and utilization
- Application services
- OS and application interoperability
- Storage space limitations based on application usage and electronic record storage

3.10 Compare and contrast EHR/EMR technologies and how each is implemented.

- ASP/Cloud vs. client-server (locally-hosted)
- Browser vs. installed application vs. terminal/remote access
- Hardware requirements

4.0 Medical Business Operations

4.1 Identify commonly used medical terms and devices.

- Interfaces:
 - HL7
 - e-prescribing
 - CCD
 - CCR
 - ICD10
 - CPT
 - Snowmed
 - NDCID
 - PACS
 - E/M codes
- Devices:
 - Portable x-ray machine
 - MRI
 - Vitals cuff
 - EKG
 - EEG
 - Ultrasound
 - PET
 - CT
 - Vascular/Nuclear Stress Test
 - Glucose monitor
- Clinical software and modules:
 - Patient tracking
 - Scheduling
 - Order entry
 - Practice management
 - Billing/coding
 - Tracking/auditing
- Basic clinical terms:

- Imaging
- PCP
- Stat
- Acuity
- Code blue/rapid response
- Trauma levels
- Controlled substance (levels)
- EHR/EMR
- Common medical departments:
 - Inpatient:
 - OBGYN
 - ONC
 - PEDS
 - FBC/L&D/Stork/NICU
 - ICU/CCU
 - TCU/PCU
 - MED/SURG
 - Behavior Health
 - PACU
 - OR/UR
 - ER
 - Outpatient
 - OBGYN
 - ONC
 - PEDS
 - Plastic Surgery
 - ENT
 - Respiratory
 - Physical therapy
 - Cardiovascular
 - Occupational therapy
 - Ambulatory/Day surgery
 - Radiology
 - Laboratory
 - Ophthalmology
 - Dermatology
 - Nuclear

4.2 Explain aspects of a typical clinical environment.

- Basic workflow:
 - Registration
 - Consultation
 - Examination
- Clinical processes:
 - Computerized physician order entry
 - Transcription
 - Dictation
 - Referrals/consults

- Digital signatures

4.3 Identify and label different components of medical interfaces.

- HL7:
 - Standard contents
 - Provider types
 - AL1
 - BLG
 - IN1
 - MSH
 - OBR
 - PID
 - SCH
- e-prescribing:
 - Medication reconciliation
 - Bedside medication verification
 - Allergy interactions
 - Formulary checking
- Billing:
 - EMR/EHR outbound communication
 - Types of codes
 - Clearinghouse

4.4 Determine common interface problems and escalate when necessary.

- HL7:
 - Threads/nodes deactivated
 - Improperly formatted patient demographics
 - Communication link (fax, network, internet)
- e-prescribing:
 - Improperly formatted patient demographics
 - Improperly formatted script
 - Deactivated medication
 - Controlled substance
 - Communication link (fax, network, internet)
- Medical devices:
 - Power
 - Network
 - I/O
 - Configuration settings
- Billing:
 - Improperly formatted patient demographics
 - Improperly formatted superbill
 - Communication link (fax, network, internet),
 - I/O
 - Software configuration settings

4.5 Explain the basics of document imaging.

- File types:
 - TIFF
 - PDF
 - JPG
 - GIF
- Characteristics:
 - Quality
 - Size
 - Resolution
 - Compression
- Scanning and indexing:
 - Metadata
 - Storage and retrieval
- OCR and structured data

4.6 Given a scenario, determine common clinical software problems.

- Locate the affected modules or fields
- Determine file/data types
- Escalation procedures to proper support tier
 - Vendor or local application support

4.7 Describe change control best practices and its system-wide effects.

- Procedural systematic customization
- Governance board
- System patching/updates
- Appropriate scheduling
- Change control environments:
 - Development
 - QA/Test
 - User test
 - Production/live

5.0 Security

5.1 Explain physical security controls.

- Locations for:
 - Servers
 - Network hardware
 - Printers
 - Scanners
 - Copiers
- Access:

- Servers
- Office
- Data closet
- IDF/MDF
- Backups
- Keyfobs
- Badges
- Biometrics
- Environmental
 - HVAC
 - Security lighting
 - Surveillance
 - Fire suppression
 - Personnel
 - Generator
- Office hardware
 - Locks
 - Door locks
 - Biometrics
 - Privacy screens
 - UPS

5.2 Summarize the different encryption types and when each is used.

- Types:
 - SSL
 - DES
 - AES
 - 3DES
 - PGP
- Communication:
 - Email
 - Chat
 - Smart phone
 - Collaboration sites
 - FTP sites
 - Phone
 - VoIP
 - Fax
- Storage:
 - Flash drives
 - PCs
 - Laptops
 - SD cards
 - External drives
 - Servers

- NAS
- SANS
- Dissemination of PHI

5.3 Apply best practices when creating and communicating passwords.

- Communication of passwords
- Storage of passwords
- Password strength (complexity/length)
- Password reuse

5.4 Classify permission levels based on roles.

- Read
- Write
- Modify
- Full access

5.5 Identify different remote access methods and security controls.

- RDC
- VPN
- Remote control applications
- Terminal emulation
- L2TP
- SSH
- HTTPS
- SFTP

5.6 Recognize wireless security protocols and best practices.

- WEP
- WPA
- WPA2
- AES
- RADIUS
- SSID naming
- MAC filtering
- Site surveys
- Access point placement

5.7 Implement best practices in secure disposal of electronic or physical PHI.

- Secure shredding
- Degaussing
- Sanitizing

5.8 Implement backup procedures based on disaster recovery policies.

- Deployment, configuration and testing of backups
- Backup storage:
 - Offsite
 - Courier
 - Onsite
- Methods of secure transfer
- Backup inventory

5.9 Identify common security risks and their prevention methods.

- Social engineering – User training
- Phishing – User training
- Spamming – Filters
- Malware – Access control
- Spyware – Anti-spyware

CompTIA Healthcare IT Technician ACRONYMS

ACL	access control list
AGP	accelerated graphics port
AMD	advanced micro devices
ARRA	American Reinvestment Recovery Act
ASC	Ambulatory Surgery Center
ATA	advanced technology attachment
BA	Business Associate
BAA	Business Associate Agreement
BIOS	basic input/output system
BP	Blood Pressure
CCD	Continuity of Care Document
CCR	Continuity of Care Record
CCU	Critical Care Unit
CD	compact disc
CDC	Center for Disease Control
CD-ROM	compact disc-read-only memory
CD-RW	compact disc-rewritable
CDS	Cardiac Diagnostic Services
CFR	Code of Federal Regulation
CMOS	complementary metal-oxide semiconductor
CMS	Center for Medicare Services
CNA	Certified Nursing Assistant
CPOE	Computerized Physician Order Entry
CPT	Current Procedural Terminology
CPU	central processing unit
CRN	Clinical Resource Nurse
CSW	Clinical Social Worker
CT	Computerized Tomography
DA	Dental Assistant
DB-25	serial communications D-shell connector, 25 pins
DB-9	9 pin D shell connector
DDOS	distributed denial of service
DDR	double data-rate
DDR RAM	double data-rate random access memory
DDR	
SDRAM	double data-rate synchronous dynamic random access memory
DHCP	dynamic host configuration protocol
DIMM	dual inline memory module
DLP	digital light processing

DMZ	demilitarized zone
DNS	domain name service or domain name server
DO	Doctor of Osteopathy
DRP	Disaster Recovery Plan
DSL	digital subscriber line
DVD	digital video disc or digital versatile disc
DVD-R	digital video disc-recordable
DVD-RAM	digital video disc-random access memory
DVD-ROM	digital video disc-read only memory
DVD-RW	digital video disc-rewritable
E/M	Evaluation and Management Code
EEG	Electro Encephalogram
EHR	Electronic Health Record
EKG/ECG	Electro-Cardiogram
EMI	electromagnetic interference
EMR	Electronic Medical Record
ENT	Ears, Nose and Throat
EP	Eligible Provider
ePHI	Electronic Personal Health Information
ER	Emergency Room
ESD	electrostatic discharge
FAT	file allocation table
FAT32	32-bit file allocation table
FBC	Family Birthing Center
FDA	Food and Drug Administration
FQDN	fully qualified domain name
FTP	file transfer protocol
Gb	gigabit
GB	gigabyte
GHz	gigahertz
GUI	graphical user interface
H&P	History and Physical
HCL	hardware compatibility list
HDD	hard disk drive
HDMI	high definition media interface
HHS	Health and Human Services
HIPAA	Health Information Portability Accountability Act
HITECH	Health Information Technology
HL7	Health Level 7
HTML	hypertext markup language
HTTP	hypertext transfer protocol
HTTPS	hypertext transfer protocol over secure sockets layer

HVAC	Heating Ventilation and Air Conditioning
I/O	input/output
ICD	International Code of Diseases
ICR	intelligent character recognition
ICU	Intensive Care Unit
IDE	integrated drive electronics
IDS	Intrusion Detection System
IEEE	Institute of Electrical and Electronics Engineers
IP	internet protocol
IPCONFIG	internet protocol configuration
IPSEC	internet protocol security
ISP	internet service provider
Kb	kilobit
KB	Kilobyte or knowledge base
L&D	Labor and Delivery
LAN	local area network
LCD	liquid crystal display
LOINC	Logical Observation Identifiers Names and Codes
LPN	Licensed Practitioner Nurse
LVN	Licensed Vocational Nurse
MA	Medical Assistant
MAC	media access control / mandatory access control
MB	megabyte
Mb	megabit
MD	Medical Doctor
MFD	multi-function device
MFP	multi-function product
MHz	megahertz
MOU	Memorandum of Understanding
MP3	Moving Picture Experts Group Layer 3 Audio
MP4	Moving Picture Experts Group Layer 4
MPEG	Moving Picture Experts Group
MRI	Magnetic Resonance Imaging
MSCONFIG	Microsoft configuration
NAS	network-attached storage
NAT	network address translation
NDCID	National Drug Code Identifier
NIC	network interface card
NICU	Neonatal Intensive Care Unit
NIST	National Institute of Standards and Technology
NP	Nurse Practitioner
NTFS	new technology file system

NUC	Nursing Unit Clerk
OBGYN	Obstetrics and Gynecology
OBR	Observation Request
OCR	Office of Civil Rights
OCR	Optical Character Recognition
OCR	optical character recognition
ODBC	Open Database Connectivity
OEM	original equipment manufacturer
ONC	Office the of National Coordinator
ONC	Oncology
ONC-ATCB	Office of the National Coordinator – Authorized Temporary and Certification Body
OR	Operating Room
OS	operating system
OT	Occupational Therapist
PA	Physician Assistant
PACS	Picture Archiving Communication System
PACU	Post Anesthesia Care Unit
PC	personal computer
PCI	peripheral component interconnect
PCIe	peripheral component interconnect express
PCIX	peripheral component interconnect extended
PCP	Primary Care Physician
PCT	Patient Care Technician
PCU	Progressive Care Unit
PDA	personal digital assistant
PEDS	Pediatrics
PET	Position Emission Tomography
PGP	Pretty Good Privacy
PHI	Protected Health Information
PHR	Personal Health Record
PKI	public key infrastructure
PM	Practice Manager
PM	Project Manager
POP3	post office protocol 3
POST	power-on self test
PPACA	Patient Privacy and Affordable Care Act
PS/2	personal system/2 connector
PT	Physical Therapist
QA	Quality Assurance
QC	Quality Control
RAID	redundant array of independent (or inexpensive) discs

RAM	random access memory
RDP	Remote Desktop Protocol
RF	radio frequency
RFI	radio frequency interference
RGB	red green blue
RISC	reduced instruction set computer
RJ	registered jack
RJ-11	registered jack function 11
RJ-45	registered jack function 45
RN	Registered Nurse
ROM	read only memory
RS-232	recommended standard 232
RS-232C	recommended standard 232
RT	Respiratory Therapist
S.M.A.R.T.	self-monitoring, analysis, and reporting technology
SAN	storage area network
SATA	serial advanced technology attachment
SCSI	small computer system interface
SCSI ID	small computer system interface identifier
SD card	secure digital card
SDRAM	synchronous dynamic random access memory
SIMM	single inline memory module
SLA	Service Level Agreement
SMTP	simple mail transfer protocol
SNMP	simple network management protocol
SoDIMM	small outline dual inline memory module
SOHO	small office/home office
SRAM	static random access memory
SSH	Secure shell
SSID	service set identifier
SSL	secure sockets layer
STP	shielded twisted pair
SVGA	super video graphics array
TB	terabyte
TCP	transmission control protocol
TCP/IP	transmission control protocol/internet protocol
TCU	Transitional Care Unit
UA	Unit Assistant
UPS	uninterruptible power supply
URL	uniform resource locator
URO	Urology
USB	universal serial bus

VGA	video graphics array
VoIP	voice over internet protocol
VPN	virtual private network
WAN	wide area network
WAP	wireless application protocol
WEP	wired equivalent privacy
WIFI	wireless fidelity
WLAN	wireless local area network
WPA	wireless protected access