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Sparkle Through Innovation: How AI and Robotics Elevate the Pharmacy Technician Role

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Disclosure

We do not have a vested interest in or affiliation with any corporate organization offering financial support or grant monies for this continuing education activity, or any affiliation with an organization whose philosophy could potentially bias my presentation (within the last 12 months).

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Presentation Objectives

- Describe how robotics and AI are shaping pharmacy technician practice and supporting technician workflows
- Identify how pharmacy technician roles are evolving in technology-driven pharmacy settings
- Recognize key skills that remain essential and apply strategies to stay adaptable and future-ready

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Let's start with a quick poll!



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Why This Topic Matters

Rapid growth of automation and AI in healthcare

Increasing workload and staffing challenges

Growing uncertainty about all workplace roles

- All of the above can bring about a sense of fear about our career futures!
- Our patients are also both intrigued and concerned about robots replacing humans.
- Enjoying convenience versus trusting capability is a big question in this space.

Source:

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The Practice Gap

Who in the audience had a course in their program on technology advancements in pharmacy practice?

- Limited understanding of AI and robotics
- Fear of job replacement
- Unclear about future roles

Are you asking yourself or your leaders?

- Will technology replace me?
- What will my job look like in 5 or 10 years

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ROBOTICS VS ARTIFICIAL INTELLIGENCE

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Robotics?

Robotics --> Physical automation

- IV robots
- Dispensing systems
- Robots that move around and do tasks
- Less workload on pharmacy technicians
- Faster delivery plus fewer errors
- More time for higher-level tasks



Image credit: Serve Robotics

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ONE THING YOU SHOULD REMEMBER ABOUT ROBOTS!

Robots are built to do ONE TASK!
Humans can learn and perform MANY tasks!

Therefore, HUMANS > robots

HUMANS ARE GREATER THAN ROBOTS

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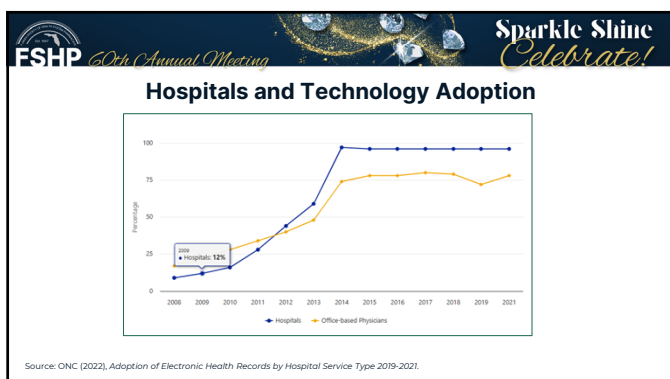
What is Artificial Intelligence?

Artificial intelligence → Decision support

AI shows up as:

- Forecasting
- Workflow optimization
- GPT agents- automating tasks
- Safety checks and alerts
- Clinical decision support
- Personalized medicine (genetic medicine)
- Diversion prevention

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Pharmacy Professionals Are Technology Friendly!

- Pharmacy has never stood still on technology.
- Robots have been around for decades.
- AI is simply the next evolution of how we deliver safer, more efficient care.

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Pharmacy Technology Evolution

Compounding Era

- Manual preparation
- Pharmacist as maker

Automation Era (1960s-1990s)

- Pill counting automation
- Early digital systems

Digital Era (2000s-2010s)

- E-prescribing
- Robotics
- Connected systems

AI Era (Today)

- Predictive analytics
- Automated product movement
- Diversion monitoring

- Same mission. Better tools.
- Technology changes. The purpose does not change.
- From counting pills → to managing systems → to supporting patient care

Source: FrameworkLTC (2022), How Did We Get Here? The History of Pharmacy Automation Systems.

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Role Evolution

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The Future is Here NOW

How Will Pharmacy Technicians Adapt and Adopt?

AI and robotics don't replace technician work. Instead, they change the type of work.

From doing the task → to managing the system that does the task

We all need a mindset shift!

You're not being replaced by technology; you're being promoted to supervise it.

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Let's Break Down What These Technologies Actually Do

Our focus for this next section will be:

- What a pharmacy technician currently does
- What is changing

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Handle Repetitive Physical Work (Robotics)

Think: movement, counting, filling

What the tech currently does:

- Moves medications from storage to dispensing points
- Counts, packages, and labels doses
- Loads and unloads automated systems

What changes for technicians:

- Less manual counting and walking laps around the pharmacy
- More system oversight and troubleshooting

Sources: American Career College (2025); Edwards (2025)

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Organize and Track Everything (Automation + Systems)

Think: inventory, location, workflow

What the tech does now:

- Tracks where every medication is in real time
- Flags low stock, expirations, and shortages
- Routes medications efficiently through the system

What changes for technicians:

- Less searching and stocking blindly
- More managing inventory systems and exceptions

Sources: American Career College (2025); Edwards (2025)

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Detect Patterns Humans Can't See (AI Analytics)

Think: diversion, errors, trends

What the tech does now:

- Identifies unusual dispensing patterns
- Flags potential diversion risks
- Detects workflow inefficiencies

What changes for technicians:

- Less reactive problem-solving
- More reviewing alerts and investigating issues

Sources: American Career College (2025); Edwards (2025)

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Support Safer Decision-Making (AI + Data Integration)

- Think: verification support, risk alerts

What the tech does now:

- Cross-checks data across systems
- Flags discrepancies or unusual orders
- Prioritizes high-risk situations

What changes for technicians:

- Less routine checking
- More focused attention on exceptions and safety

Sources: American Career College (2025); Edwards (2025)

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So, What Does This Mean for Technicians?

The Role Is Evolving and Expanding!

From:

- Manual tasks
- Repetition
- Physical movement

To:

- System management
- Critical thinking
- Exception handling
- Data awareness

Sources: American Career College (2025); Edwards (2025)

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Many organizations now employ technicians in areas such as:

- Informatics
- Automation management
- Inventory analytics
- Diversion monitoring
- Medication history
- Specialty pharmacy
- Revenue cycle support
- Quality and process improvement

These opportunities continue to grow!

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Melissa's Journey on the Pharmacy Technician Career Pathway



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Skills Needed For This Evolution!

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Maybe you are wondering.....

Questions to ask yourself and your leader!

“What’s my next step?”

“How does my role change?”

“Where do I fit in?”

“What does this mean for me?”

“How do I grow with this?”

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What is Available Today?

ASHP AI in Pharmacy Certificate

For Pharmacists and Pharmacy Technicians

18.75 CE hours

\$360 for Technician Members \$560 for Nonmembers

Covers:

- AI fundamentals
- Operational + clinical use cases
- Ethics + governance

- Includes exam + certificate
- This is your Strategist-level entry point
- Learn how to think about AI, not just use tools

Source: ASHP (2025)

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What is Offered Outside Professional Organizations?

Informatics & Data Pathways

- Pharmacy informatics certificates (ASHP + universities)
- Health IT training (Epic, automation systems)
- Data analytics programs (Basic to intermediate)
- What learnings are available for free in your organization

- Health system tuition reimbursement should not be just for degrees.
- Certificates and certifications add value to a team member's growth.
- Shadow other roles in your organization.
- Look at job descriptions at other health systems.

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Leaders – How Do We Support Our Technicians?

Move technicians towards expanded roles in healthcare!

This is the leap most techs never get supported to make.

How they build it:

- Leadership development (need formalized for techs)
- Involvement in:
 - Automation decisions
 - Workflow redesign
 - Quality improvement
 - Data/analytics initiatives

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How Are Health Systems Preparing Our Teams?

Train techs on:

- Automation systems
- Inventory prediction tools
- Diversion monitoring platforms

Include techs in:

- Workflow redesign
- AI pilots
- Project Management Classes
- Conferences



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The Human Element (Still the Star of the Show)

AI is powerful, but it's not replacing pharmacy professionals.

It's more like giving them:

- Sharper vision
- Faster reflexes
- A second brain that never sleeps

Pharmacy techs and pharmacists still bring:

- Judgment
- Ethical decision-making
- Patient communication
- Clinical intuition

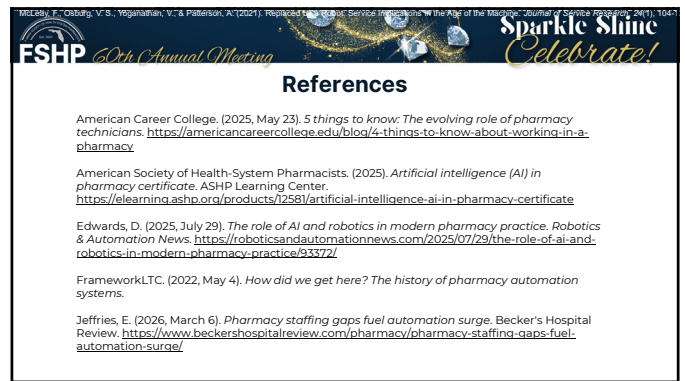


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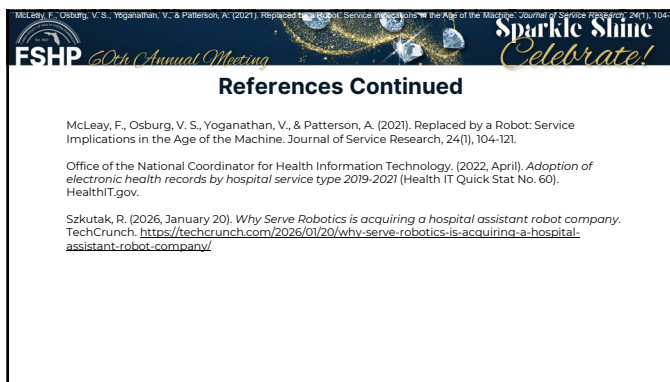
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