

IL AAHAM 2025 Annual State Institute:

AI and Coding Updates 2025 :

Balancing Innovation and Risk

Presented by Leslie Boles, BA, CCS, CPC, CPMA, CHC, CPC-I, CRC

PRESENTED BY



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Leslie Boles is the Co-Owner & President of Revu Healthcare, with over 17 years of experience in healthcare coding, auditing, and compliance. She holds various credentials and has served in leadership roles, including on the Advisory Board of Directors at Engage NC. Previously, she was the Senior Director of Compliance & Audit at Waud Capital Partners, overseeing compliance programs for portfolio companies. Leslie earned her bachelor's degree from the University of Arizona and is certified by the American Academy of Professional Coders, American Health Information Management Association, and the Health Care Compliance Association.

Leslie Boles has no financial relationships with commercial interests to disclose

Objectives

- 1. Explain AI's Influence on Coding Trends** – Understand how artificial intelligence is reshaping medical coding accuracy, efficiency, and workflow automation while recognizing the technology's current capabilities and limitations
- 2. Assess Compliance Challenges & Risk Areas** – Identify critical compliance vulnerabilities introduced by AI-driven coding systems, including algorithmic bias, audit trail gaps, and regulatory framework alignment
- 3. Discuss Practical & Ethical Integration Methods** – Evaluate implementation strategies that balance innovation with ethical considerations, including vendor evaluation, staff training, and quality assurance protocols
- 4. Develop Leadership & Governance Strategies** – Create frameworks for guiding organizational AI adoption with emphasis on change management, stakeholder engagement, and continuous monitoring

The Evolution of AI in Healthcare

Timeline of AI Development in Healthcare

1990s - Early Automation - Rule-based systems for basic coding assistance and claims processing

2000s - CAC Emergence - Computer-assisted coding systems with pattern matching capabilities

2010s - Machine Learning - NLP adoption for unstructured data analysis and predictive analytics

2020s - Generative AI - Advanced models interpreting context and providing intelligent recommendations

The Evolution of AI in Healthcare

Current AI Technologies Transforming Compliance

Natural Language Processing (NLP) - Interprets clinical narratives, physician notes, and documentation to extract coding-relevant information with contextual understanding

Machine Learning Models - Continuously improves coding accuracy through pattern recognition and learns from historical data to predict optimal code selection

Predictive Analytics - Identifies documentation gaps, forecasts denial risks, and suggests proactive interventions to improve compliance rates

Robotic Process Automation (RPA) - Automates repetitive compliance tasks, audit workflows, and reporting while maintaining consistent accuracy standards

AI IN MEDICAL CODING: CAPABILITIES & APPLICATIONS

Core AI Capabilities in Medical Coding

- **Auto-Coding & Computer-Assisted Coding (CAC)** - AI systems automatically suggest appropriate ICD-10, CPT, and HCPCS codes based on clinical documentation, reducing manual effort by up to 70% while maintaining accuracy standards
- **Unstructured Data Interpretation** - Advanced NLP algorithms extract coding-relevant information from physician narratives, operative reports, and progress notes, identifying key clinical indicators often missed in manual review
- **Pattern Recognition & Accuracy Enhancement** - Machine learning models identify coding patterns across thousands of cases, flagging potential errors, suggesting missing codes, and ensuring consistency in code assignment
- **Real-Time Documentation Improvement** - AI provides immediate feedback to clinicians during documentation, prompting for specificity needed for accurate coding and reducing query rates by 40-50%

AI IN MEDICAL CODING: CAPABILITIES & APPLICATIONS

Practical Examples & Impact Metrics

Example:

AI reviews a progress note mentioning "diabetes" and automatically prompts:

“Please specify: Type 1 or Type 2? With or without complications? If with complications, please document specific manifestations.”

Impact Metrics:

Organizations report:

- 35% reduction in coding time
- 25% decrease in denial rates
- 45% improvement in first-pass clean claim rates
- 60% reduction in compliance-related queries

Critical Balance Required:

AI augments but does not replace human expertise.

COMPLIANCE IMPLICATIONS & RISK AREAS

Key Regulatory Frameworks

- **HIPAA Privacy & Security Rules** - AI systems must ensure PHI protection, implement access controls, maintain audit logs, and comply with minimum necessary standards
- **OIG Compliance Program Guidance (2023)** - Updated requirements for risk assessment, monitoring, and auditing of automated systems used in healthcare operations
- **CMS Quality & Integrity Standards** - Medicare/Medicaid program requirements for accurate coding, documentation, and claims submission integrity
- **State-Specific AI Regulations** - Emerging state laws requiring transparency, bias testing, and human oversight for AI-driven healthcare decisions

COMPLIANCE IMPLICATIONS & RISK AREAS

Critical Risk Areas

⚠️ **Algorithmic Bias & Discrimination**

- Training data reflecting historical disparities
- Unequal accuracy across patient populations
- Potential for systematic coding variations

⚠️ **Data Integrity & Quality Issues**

- Incomplete or inaccurate source documentation
- Propagation of errors through automated systems
- Lack of context understanding in edge cases

COMPLIANCE IMPLICATIONS & RISK AREAS

Critical Risk Areas

⚠️ **Audit Trail & Transparency Gaps**

- “Black box” algorithms without explainability
- Difficulty reconstructing AI decision logic
- Challenges in demonstrating compliance during audits

⚠️ **Over-reliance on Automation**

- Reduced human review and critical thinking
- Skills atrophy among coding professionals
- Failure to catch nuanced clinical scenarios

CRITICAL:

Compliance leaders must proactively address these risks through governance, continuous monitoring, and comprehensive validation processes.

COMMON RISK SCENARIOS IN AI-DRIVEN CODING

Scenario 1: Upcoding Through Pattern Misinterpretation

Real-World Example: AI consistently assigns E/M Level 5 (99215) for complex patients based on time documentation alone, missing medical necessity requirements.

Potential Consequences:

- RAC audits and recoupment demands
- False Claims Act liability
- Reputation damage and payer scrutiny

Scenario 2: Claims Submitted Without Human Review

Real-World Example: Automated system processes and submits 2,000 claims overnight without coder validation, including numerous errors in modifier usage.

Potential Consequences:

- Mass denials requiring appeals
- Compliance program deficiency findings
- Increased oversight requirements

COMMON RISK SCENARIOS IN AI-DRIVEN CODING

Scenario 3: Black Box Algorithm Decisions

Real-World Example: Vendor refuses to disclose how their AI determines DRG assignments, making audit defense impossible when questioned by Medicare.

Potential Consequences:

- Inability to defend coding decisions
- Failed compliance audits
- Vendor contract disputes

Scenario 4: Inadequate Documentation Trail

Real-World Example: AI system changes codes post-review but doesn't maintain record of original selections, rationale, or who approved changes.

Potential Consequences:

- OIG compliance program violations
- Inability to perform internal audits
- Legal discovery challenges

BALANCING INNOVATION AND RISK: THE FRAMEWORK

 Innovation +  Governance =  Sustainable Progress

Six Principles for Balanced AI Implementation

1. Build Safe Innovation Spaces - Create controlled environments for testing AI tools with limited scope and clear boundaries before full deployment.

Action: Pilot programs with 10% of volume

2. Trust but Verify - Implement systematic validation processes for all AI outputs before they impact revenue or compliance.

Action: 100% review for first 90 days

3. Early Compliance Integration - Involve compliance teams from the initial AI evaluation phase, not as an afterthought.

Action: Compliance sign-off required

BALANCING INNOVATION AND RISK: THE FRAMEWORK

1. Continuous Monitoring - Establish KPIs and dashboards to track AI performance, accuracy, and compliance metrics in real-time.

Action: Weekly performance reviews

2. Transparent Documentation - Maintain clear records of AI decision logic, override rationales, and human interventions.

Action: Audit-ready documentation

3. Skills Enhancement - Invest in upskilling staff to work alongside AI, focusing on critical thinking and exception handling.

Action: Quarterly AI literacy training

“Compliance as Innovation Partner, Not Barrier” - Transform your compliance function from gatekeeper to strategic enabler of responsible AI adoption.

PRACTICAL INTEGRATION STRATEGIES

Five-Step Implementation Workflow

- **Create AI-Specific Compliance Policies**

Develop comprehensive SOPs covering AI tool selection, validation requirements, override protocols, and escalation procedures. Include specific thresholds for human review based on confidence scores.

- **Comprehensive Staff Training Program**

Launch role-based training covering AI capabilities, limitations, ethical considerations, and when to override recommendations. Include hands-on practice with sandbox environments.

- **Vendor Transparency Requirements**

Mandate algorithm documentation, bias testing results, and performance metrics. Require vendors to provide audit trails and explain decision logic for regulatory reviews.

- **Quarterly AI Coding Audits**

Perform systematic reviews comparing AI suggestions to final codes, tracking override rates, identifying patterns, and validating accuracy across different service lines.

- **Human-in-the-Loop Validation**

Implement mandatory human review checkpoints before claim submission, with escalation triggers for complex cases, high-dollar claims, or low-confidence AI outputs.

PRACTICAL INTEGRATION STRATEGIES

Critical Success Factors

Phased Rollout: Start with low-risk areas, gradually expand as confidence builds

Performance Metrics: Track accuracy rates, denial rates, audit findings, and productivity gains

Feedback Loops: Create mechanisms for coders to report issues and improve AI models

Regular Updates: Ensure AI models reflect latest coding guidelines and payer policies

Cross-Functional Teams: Involve IT, HIM, Compliance, and Clinical teams in governance

PLAN → IMPLEMENT → MONITOR → VALIDATE → OPTIMIZE

LEADERSHIP & CHANGE MANAGEMENT FOR AI ADOPTION

Four Pillars of AI Leadership

Visionary Leadership

Leaders must champion ethical AI adoption while maintaining focus on patient care quality and compliance integrity

Key Actions:

- Articulate clear AI vision aligned with organizational values
- Secure executive buy-in and resource allocation
- Model responsible AI use through personal engagement

Transparent Communication

Open dialogue about AI capabilities, limitations, and safeguards builds trust and reduces resistance to change

LEADERSHIP & CHANGE MANAGEMENT FOR AI ADOPTION

Key Actions:

- Regular town halls to address AI concerns and myths
- Share success stories and lessons learned
- Create feedback channels for continuous improvement

Stakeholder Engagement

Involve all affected parties early in the process to ensure buy-in and identify potential challenges proactively

Key Actions:

- Form AI governance committee with diverse representation
- Conduct impact assessments for each department
- Create champion networks to drive adoption



LEADERSHIP & CHANGE MANAGEMENT FOR AI ADOPTION



Performance Measurement

Track both quantitative and qualitative metrics to demonstrate value and identify areas for improvement

Key Actions:

- Define success metrics before implementation
- Create real-time dashboards for transparency
- Regular reporting to board and stakeholders

Cross-Functional Collaboration Model

AI Council (Central Coordination)



Compliance (Risk & Governance) • IT (Technical Support) • HIM (Operational Excellence) • Clinical (Quality Assurance)

THE FUTURE OF AI IN COMPLIANCE

Emerging AI Capabilities



Predictive Compliance Analytics

AI will proactively identify compliance risks before they materialize, analyzing patterns across claims, documentation, and payer behaviour

Potential *Impact*: 80% reduction in post-payment audits by 2027



Real-Time Documentation Intelligence

Continuous monitoring of clinical documentation with instant alerts for missing elements, contradictions, or compliance gaps

Potential *Impact*: Query rates drop below 5% industry-wide

THE FUTURE OF AI IN COMPLIANCE

Emerging AI Capabilities

AI as Compliance Educator

Interactive AI tutors providing personalized training, real-time guidance, and scenario-based learning for coding staff

Potential *Impact*: 50% reduction in training time, 90% retention rates

Automated Regulatory Adaptation

AI systems automatically updating coding logic based on new regulations, payer policies, and industry guidelines

Potential *Impact*: Same-day implementation of regulatory changes

KEY TAKEAWAYS

1. AI Enhances with Expert Oversight

Artificial intelligence dramatically improves coding efficiency and accuracy, but requires continuous human validation to ensure compliance integrity and catch nuanced clinical scenarios.

Remember: AI augments, not replaces, human expertise

2. Ethical Frameworks Are Non-Negotiable

Successful AI implementation demands robust governance structures, transparent policies, and clear accountability measures from day one of deployment.

Build ethics into the foundation, not as an afterthought

KEY TAKEAWAYS

1. Compliance Drives Innovation

Position compliance teams as strategic partners who enable responsible AI adoption through proactive risk management and collaborative problem-solving.
Transform from gatekeeper to innovation enabler

2. Success Requires Full Lifecycle Management

Embed compliance considerations throughout the AI journey: selection, implementation, monitoring, optimization, and continuous improvement phases.
Every stage needs compliance integration

The Path Forward

AI in healthcare coding and compliance isn't just about technology—it's about thoughtfully balancing innovation with responsibility, efficiency with accuracy, and automation with human judgment.

KEY TAKEAWAYS

START TODAY:

1. Assess your current state
2. Build your governance framework
3. Lead the change

QUESTION & ANSWER



THANK YOU

FOR YOUR ATTENTION



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