1. Automated query generation for clinical quality reporting - Design a system that converts natural language requests from quality managers into optimized SQL queries for Epic Clarity, extracting the right metrics from the right tables to generate CMS-required reports. Participants will develop prompts to parse measure specifications, identify relevant data sources, generate SQL, and validate results.
2. Structured data extraction from unstructured clinical notes - Create a workflow that reviews clinician notes to extract discrete data elements for billing, registry reporting, and research. The system should identify conditions, map to appropriate codes, flag documentation gaps, and suggest improvements.
3. Automated prior authorization submission and tracking - Develop a system that streamlines the insurance approval process by extracting relevant clinical information, matching to payer criteria, generating complete authorization requests, predicting approval likelihood, and creating appeals for denials.
4. Protocol-driven clinical trial eligibility screening - Create a workflow that continuously evaluates patients for clinical trial eligibility by parsing complex inclusion/exclusion criteria, identifying potential matches, calculating confidence scores, and creating coordinator-facing worklists.
5. Automated discharge summary generation and distribution - Implement a workflow that creates comprehensive discharge documentation by analyzing the entire hospitalization record, synthesizing the hospital course, generating medication reconciliation, and tailoring communication for different audiences.
6. Clinical guideline adherence monitoring and intervention - Design a system that evaluates treatment decisions against evidence-based guidelines, identifying variance between current treatment and recommendations, generating provider notifications, and tracking response patterns.
7. Social determinants of health extraction and intervention matching - Create a workflow that identifies SDOH factors affecting patient care by analyzing clinical notes for social needs, classifying them into structured categories, matching to available community resources, and tracking outcomes.
8. Automated radiology report structuring and critical finding alerts - Develop a system that enhances radiology workflow by parsing free-text reports into structured findings, identifying critical results requiring urgent communication, comparing against prior studies, and generating follow-up recommendations.
9. EHR data normalization across multi-hospital systems - Design a workflow that harmonizes clinical data from disparate EHR implementations by mapping local terminologies to standard vocabularies, resolving data quality issues, creating unified patient timelines, and maintaining data provenance.
10. Procedural documentation optimization for appropriate reimbursement - Create a workflow that ensures complete documentation for accurate coding and billing by analyzing procedure notes against CPT requirements, identifying missing elements, generating tailored templates, and providing real-time feedback during documentation.