CASE STUDY

How RWJBarnabas Health Scaled Pancreatic Cyst Surveillance

Using an AI-Driven Pancreas Model

RWJBarnabas HEALTH

RUTGERS Cancer Institute of New Jersey
RUTGERS HEALTH

The Challenge

Pancreatic cysts are the most common identifiable precursor lesion to pancreatic cancer, yet national surveillance remains inconsistent and fragmented. Dr. Russell C. Langan, Surgical Oncologist at RWJ Barnabas Health and Rutgers Cancer Institute, highlighted several persistent barriers to timely identification and longitudinal follow-up:

- **Most pancreatic cysts are incidentally identified and never linked to appropriate follow-up.** Imaging performed in emergency departments or outpatient centers often does not translate into structured surveillance.
- **More than half of identified patients do not receive subsequent evaluation.** Manual workflows, lack of clear ownership, and variable referral patterns result in substantial patient attrition.
- **Knowledge gaps persist nationwide.** Studies continue to show wide variability in provider understanding of cyst-related malignancy risk and appropriate surveillance intervals.
- **Surveillance frequently relies on self-navigation or manual referrals.** These pathways create operational and socioeconomic barriers that disproportionately erode adherence.
- **80% of pancreatic cancers are diagnosed at unresectable or metastatic stages.** Delays in recognition and interval monitoring directly contribute to advanced-stage presentation.

These gaps underscored the need for a system-wide surveillance structure capable of detecting at-risk patients automatically and maintaining reliable longitudinal monitoring.

eon

THE APPROACH:

System-Wide Surveillance Using Eon's AI-Driven Pancreas Model

An established oncology leader, with a focus in hepatobilliary disease, Dr. Langan recognized the opportunity to leverage RWJ's existing partnership with an AI-solution tracking and managing its lung program, to create a pancreas-specific model. His goal: create a reliable, automated mechanism to identify pancreatic cysts and abnormalities across an entire health system and support evidence-based follow-up at scale.

1. Pancreas-Specific AI Model for Automated Identification

The Computational Linguistics model reads radiology reports from the first word to the last, interpreting the structure of clinical language—not keywords—to detect pancreatic cysts, masses, neuroendocrine tumors, duct changes, and peripancreatic abnormalities.

The Eon Pancreas AI Model (Dec 2025):

330+
facilities

30,000+
abnormalities identified

2. Integrated Navigation Framework

RWJBarnabas paired automated identification with coordinated navigation using a combination of:

- Nurse practitioners and navigators
- Automated EHR-embedded notifications
- Provider letters and patient reminders
- Optional virtual navigation support where internal capacity was limited

This ensured consistent workflows across community hospitals and the academic medical center.

3. Standardized, Evidence-Based Pathways

There is no universally established criteria for recommended cyst management, instead several different guideline alternatives. Eon's AI-model can configure with any institution's preferred evidence-based criteria to adapt it's outputs.

This allowed:

- Consistent surveillance intervals
- Clear escalation criteria
- Uniform, system-wide communication

4. Flexible Models Tailored to Clinical Capacity

The platform supported both high-volume surveillance growth and risk-stratified models where specialist resources were limited.

Low-risk patients could be followed using the platform with minimal human intervention, while moderate- and high-risk patients were routed to the appropriate specialists.

5. Continuous AI Monitoring Through a Follow-Up Listener

The pancreas AI model includes a background listener that continuously monitors for:

- New imaging
- Interval change in size or morphology
- Duct dilation or progressive findings
- New abnormalities

Detected changes trigger automatic alerts with recommended next steps based on configured guidelines.

6. Enterprise-Level Coordination Across 12 Hospitals

The standardized approach enabled a unified surveillance program across all RWJBarnabas hospitals.

Referral patterns, escalation workflows, and adherence processes were consistent across the enterprise.

RWJBarnabas Results-to-Date (October 2025)

SIGNIFICANT GROWTH IN IDENTIFIED PATIENTS

37x
increase in pancreatic cyst and cancer patients identified

4,600+
downstream exams generated, improving evaluation and stratification

External partners (UCHealth, LifePoint Health) have reported similar AI-driven cancer identification patterns

EARLIER-STAGE CANCER DETECTION

55%
of cancers were identified at **non-metastatic stages**
(higher than historical baselines)

HIGH RETURN-TO-CARE AND ADHERENCE

77% return rate for high-risk cyst patients

72% return rate across all cyst patients
(national benchmarks are generally ≤30%)

IMPROVED DIAGNOSTIC AND PROCEDURAL ALIGNMENT

Increased EUS volume

More appropriate MRI utilization

Faster and more accurate routing to surgical oncology and GI specialists

Uniform, System-Wide Processes

The surveillance framework operated consistently across community hospitals and the system's academic medical center, ensuring standardized, risk-appropriate care regardless of patient entry point.

Clinical Takeaways

- **Automated detection closes the identification gap for incidental cysts.**
  Report-based AI surfaces patients who would otherwise be missed.
- **Standardized communication supports reliable adherence.**
  Automated notifications and structured workflows maintain engagement.
- **Continuous monitoring reduces manual review burden.**
  Interval change is detected and escalated promptly.
- **Risk-stratified models optimize specialist resources.**
  Low-risk patients can be managed efficiently, while higher-risk patients receive timely specialist evaluation.
- **Consistent system-level processes reduce variation in care.**
  A unified approach ensures that surveillance quality is not dependent on location or provider.
- **Large datasets will accelerate future predictive analytics.**
  Broad deployment of the pancreas AI model strengthens future risk stratification efforts.

About Eon

Eon is a healthcare technology company focused on supporting health systems in the identification and ongoing management of patients at risk of cancer and other life-threatening conditions. Powered by condition-specific clinical AI, Eon's longitudinal care management platform extracts incidental findings documented in radiology reports and helps ensure patients receive timely, guideline-based follow-up and remain in appropriate surveillance over time.

More than 70 health systems across over 1,200 facilities rely on Eon and its care management services to scale early detection programs, enable earlier diagnosis and treatment, and support sustained patient engagement—outcomes that also carry meaningful financial implications for health systems.

Ready to Transform Your Incidental Findings Management?

See how Eon can help your health system achieve results like RWJBarnabas Health's.
Learn more at eonhealth.com