Improving kidney health evaluation with Da Vinci DEQM API

Early detection, quality measures and interoperable technology are transforming chronic kidney disease care and boosting payer performance in HEDIS and Star Ratings.

Chronic kidney disease (CKD) is a silent epidemic—progressive, costly and often undetected until its late stages. Despite its prevalence, especially among individuals with diabetes, CKD frequently goes undiagnosed, leaving patients vulnerable to complications and payers exposed to escalating costs. In the United States, CKD affects over 37 million people, and among Medicare beneficiaries, just 14% carry a diagnosis while accounting for 25% of total spending—over $115 billion annually[1].

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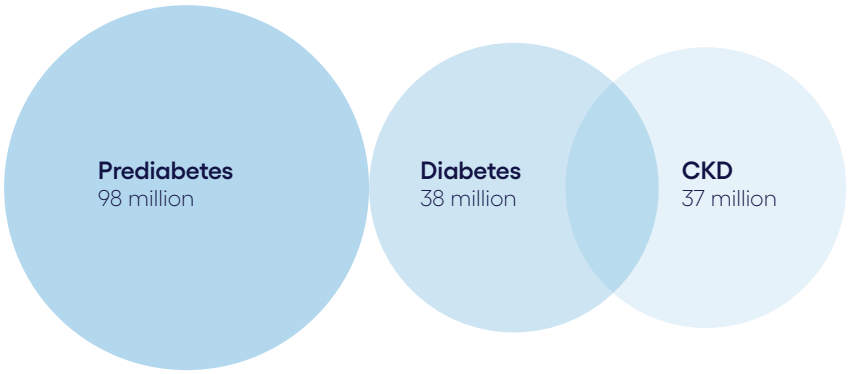
Diabetes and CKD are closely related chronic conditions. While they can occur on their own, the prevalence of CKD among people with diabetes is >25%, and it has been estimated that 40% of people with diabetes eventually develop CKD during their lifetime.



Despite the high prevalence and cost burden of chronic kidney disease, early detection remains elusive for many patients. To address this, national quality programs like HEDIS® and Medicare Star Ratings have introduced measures such as the Kidney Health Evaluation for Patients with Diabetes (KED), which require both estimated glomerular filtration rate (eGFR) and urine albumin-creatinine ratio (uACR) tests. These metrics are now critical benchmarks for health plan performance. Yet, performance remains suboptimal: Only 41.8% of Medicare patients and 49.0% of privately insured patients receive both tests[2].

Stop the progression of CKD and prevent adverse outcomes

Prognosis of CKD by GFR and albuminuria categories

GFR categories (ml/min/1.73m²) Description and range				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
	G1	Normal or high	≥90			
	G2	Mildly decreased	60-90			
	G3a	Mildly to mederately decreased	45-59			
	G3b	Moderately to severely decreased	30-44			
	G4	Severely decreased	15-29			
	G5	Kidney failure	<15			

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red: very high risk

KDIGO 2021

50% mortality

Cardiovascular disease

Disease multiplier

37 million with CKD

Early detection eGFR and uACR

Risk factor

38 million with diabetes

Source: National Kidney Foundation

Technology offers a promising path forward

Achieving compliance with the aforementioned measures is challenging. Fragmented data systems, limited provider awareness and inconsistent workflows contribute to missed opportunities for timely testing. This is where interoperability initiatives like the HL7® Da Vinci project[3] can play a transformative role.

The Da Vinci Data Exchange for Quality Measures (DEQM) API, in conjunction with payer-driven tools like TriZetto® ClaimSphere®, is helping bridge the data-sharing gap between payers and providers. By enabling real-time identification of care gaps, facilitating proactive outreach and supporting value-based care models that reward early detection and chronic disease management, these tools enable health plans to not only improve HEDIS and Star Ratings but also reduce costs and enhance patient outcomes.

Bridging the interoperability gap in kidney health evaluation

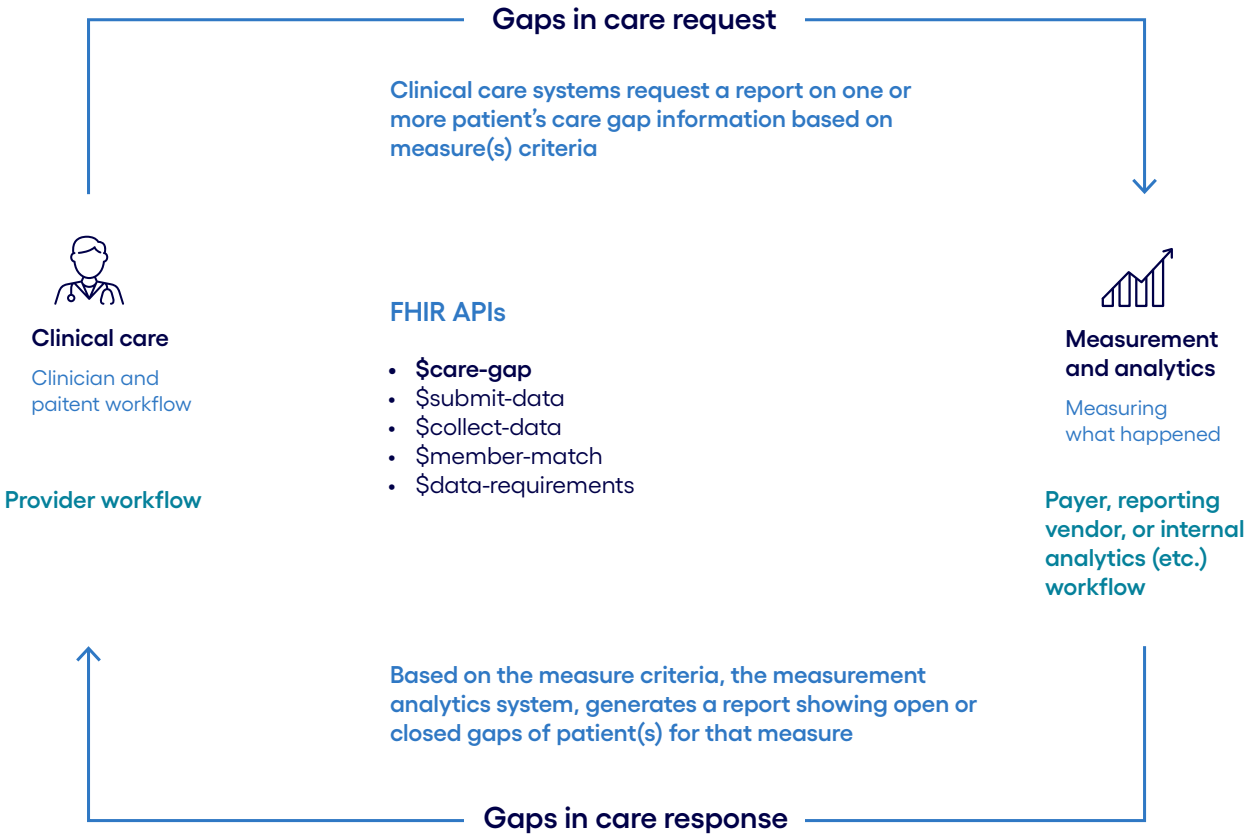
Despite the growing emphasis on early detection of CKD, interoperability remains a major barrier to effective care coordination. The HL7 Da Vinci project identifies fragmented data exchange and lack of standardization as critical challenges that prevent payers and providers from working together efficiently.

Without seamless access to clinical data, health plans struggle to identify care gaps, and providers lack the insights needed to act on them in real time.

To address this, the Da Vinci DEQM Implementation Guide introduces a standardized framework for exchanging quality data using FHIR® APIs. These APIs enable automated, bidirectional communication between payer systems and provider electronic health records (EHRs), allowing for timely, workflow-integrated notifications about missing tests or overdue screenings.

One of the most impactful applications of this framework is in the KED measure. The TriZetto ClaimSphere platform, aligned with Da Vinci DEQM, supports two complementary data-sharing protocols:

- **Traditional scorecards** delivered via secure portals provide performance insights for accountable care organizations (ACOs) and patient-centered medical homes (PCMHs). These scorecards include member-level details, flagging diabetic patients who are noncompliant with KED testing and identifying which components—eGFR or uACR—are missing.
- **Modern FHIR APIs** enable real-time care gap alerts directly within provider workflows. For example, when a provider accesses a diabetic patient's record, the EHR can trigger a $care-gap request to the payer system. The payer responds with a DEQM Individual MeasureReport, detailing the patient's compliance status and highlighting missing tests. This exchange happens in seconds, empowering providers to take immediate action during the visit.



Source: Figure 2-13 Gaps in Care Reporting Flow, HL7 Da Vinci

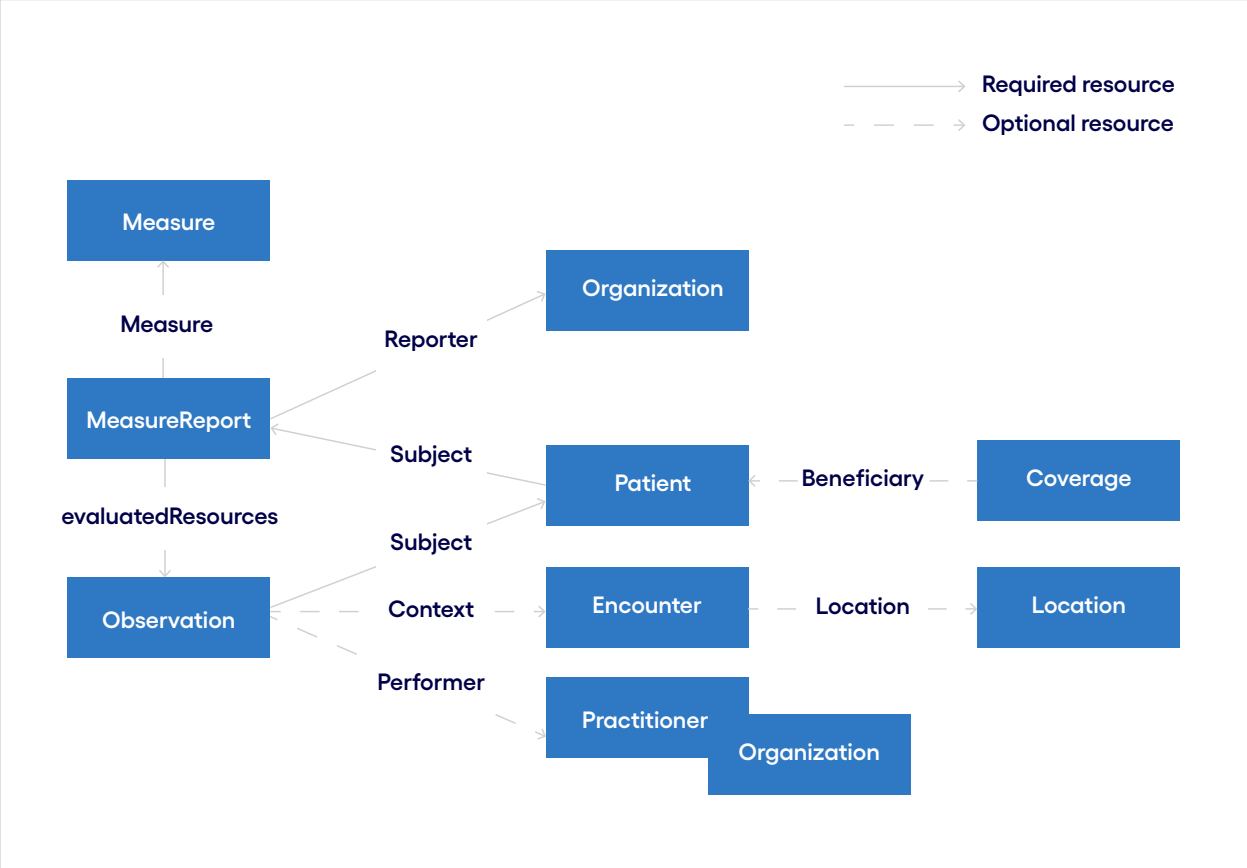
These "moments that matter" are critical for transforming CKD care. By embedding care gap insights into clinical workflows, providers can proactively close gaps, improve KED compliance and ultimately reduce the risk of late-stage kidney disease. For payers, this translates into better HEDIS and Star Ratings performance, reduced costs and improved member outcomes.

Practical example: Real-time care gap closure using DEQM and FHIR

John Smith, a 55-year-old patient with Type 2 diabetes, is scheduled for a routine visit with his primary care physician, Dr. Jane Doe. As part of her standard EHR workflow, Dr. Doe opens John's record and initiates a $care-gap request to the payer's system. This request, transmitted over standard HTTP protocols, leverages HL7 FHIR to query for any outstanding quality measures.

Within seconds, the payer system, which is equipped with longitudinal claims and clinical data, responds with a DEQM Individual MeasureReport. This report includes John's compliance status with evidence-based guidelines relevant to his demographic and clinical profile, including the KED measure.

The response reveals that while John has completed the uACR test, his eGFR test is still outstanding. These results are conveyed using FHIR Observation resources, which are evaluated as part of the KED measure logic.

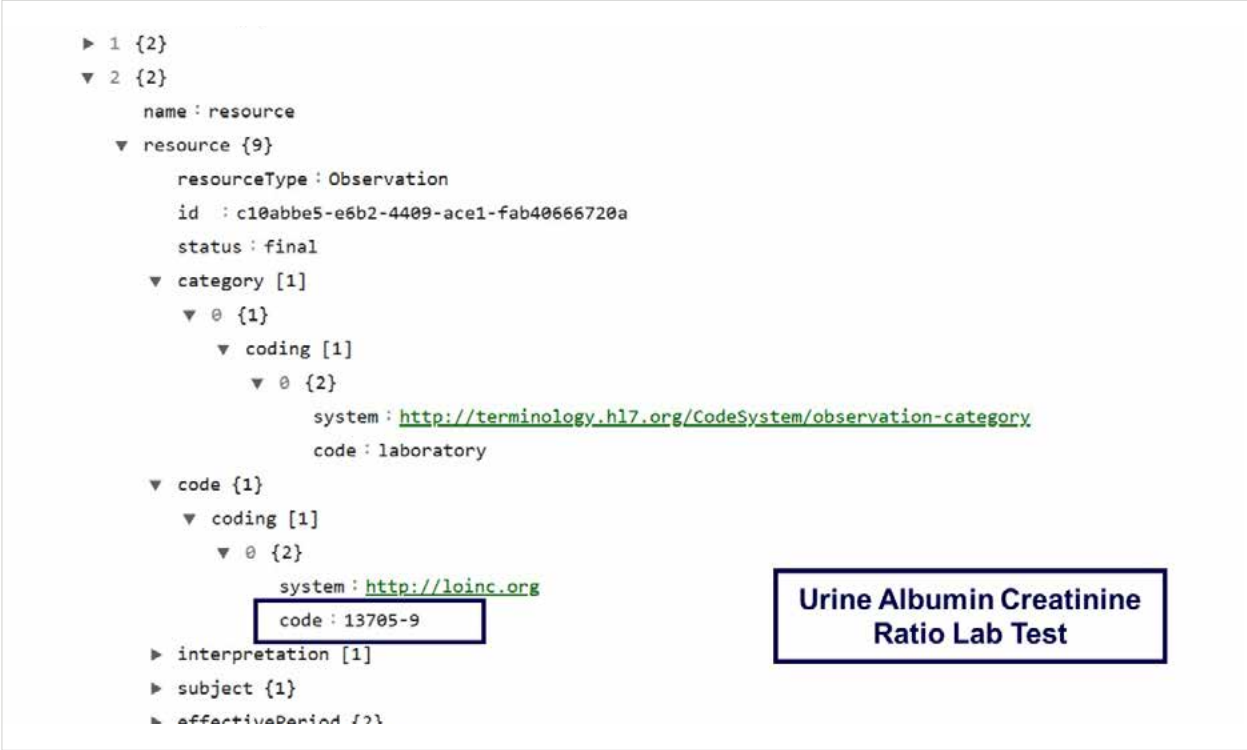


Source: HL7 Da Vinci

Because this information is delivered directly into Dr. Doe's workflow, she is able to act immediately—ordering the missing eGFR test during the same visit. This seamless, standards-based exchange transforms what could have been a missed opportunity into a proactive intervention, improving both patient care and quality measure performance.

Explained below is a snippet from the FHIR Observation resource that has the patient data which was evaluated to determine if the patient was compliant with the guidelines for KED. Observation resource includes vital signs, laboratory data like blood glucose and eGFR, imaging results and device measurements like pulse oximeter data.

John Smith had a uACR test conducted which is denoted by the LOINC code 13705-9, but the eGFR test hasn't been conducted.



System-wide impact of real-time data exchange

A streamlined, data-driven workflow benefits every stakeholder in the healthcare ecosystem:

- **Providers and care managers** gain timely, actionable insights into patient care gaps, enabling them to prioritize high-impact quality measures and deliver more proactive care
- **Payer quality teams** can monitor performance on value-based payment (VBP) measures with greater precision, reducing reliance on manual chart reviews and accelerating compliance tracking
- **Members** become more engaged in their health journeys, empowered by evidence-based guidelines and timely interventions that support informed decision-making

Together, these improvements contribute to a more efficient, equitable and cost-effective healthcare system. In a landscape where US healthcare spending exceeds $4.9 trillion annually[4], every closed care gap matters. And sometimes, all it takes is one well-timed member API call to make a difference.

About HEDIS

HEDIS (Healthcare Effectiveness Data and Information Set) is a widely adopted set of standardized performance measures developed by the NCQA and used by over 90% of US health plans to assess healthcare quality. It includes more than 90 rigorously tested metrics across six domains—effectiveness, access, experience, utilization, health plan information and electronic data systems—ensuring reliable comparisons across organizations. HEDIS measures help payers make informed decisions about coverage and reimbursement, support providers in benchmarking and improving care quality, and enhance patient trust and outcomes by promoting value-based care.

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3. Home - Data Exchange For Quality Measures Implementation Guide v4.0.0
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