



PERSPECTIVES FROM HEALTHCARE SYSTEM ADMINISTRATORS AND POLICY MAKERS

CONTROVERSIES CONFERENCE ON TECHNOLOGICAL ADVANCEMENTS TO SUPPORT GUIDELINE-INFORMED CARE

MADRID, SPAIN

NOVEMBER 21, 2025

Leslie Wong, MD, MBA, FACP, FASN
System Executive Medical Director, Medicine
Rochester Regional Health
New York, U.S.A.



GOVERNANCE OF HEALTHCARE TECHNOLOGY IN HEALTHCARE SYSTEMS

Explain key aspects of the governance of healthcare technology in healthcare systems

Examples of U.S. Healthcare Systems



Cleveland Clinic
 23 Hospitals
 280 Outpatient Facilities
 83,000 Employees
 Worldwide Locations



Intermountain Health
 34 Hospitals
 400 Outpatient Facilities
 68,000 Employees
 9 U.S. States



Rochester Regional Health
 9 Hospitals
 550 Outpatient Facilities
 20,000 Employees
 Western, Northern N.Y. State

Cleveland Clinic

CARE PATH GUIDE

Chronic Kidney Disease

CONTENTS

- Introduction 2
- Focus 2
- Scope 2
- Episodes of Care 3
- Screening 3
- Diagnosis 3
- Staging and Prognosis 4
- General Guidelines for Timing of Nephrology Referral 4
- GFR-Based CKD Management 7
- References 10
- Appendices 11

Clinical Guidelines

Kidney Health for Chronic Kidney Disease Stages 1-3B (September 2023)

Purpose
 To promote improved kidney health across Intermountain Health by empowering primary care providers to manage early-stage CKD patients and deliver guideline-directed medical therapy (GDMT) to slow kidney failure progression and reduce cardiovascular events to as many eligible patients as possible.

Rationale
 The Intermountain Kidney Services (IKS) clinical guideline: Kidney Health for Chronic Kidney Disease (CKD) stages 1-3B describes a systematic and pragmatic approach to delivering evidence-based CKD care in the primary care setting. Central to this clinical guideline is use of GDMT to maximize protection against kidney failure and major adverse cardiovascular events (MACE) related to heart failure (HF) and atherosclerotic cardiovascular disease (ASCVD). This clinical guideline seeks to implement standard criteria across Intermountain Health to assess risk of kidney failure progression, guide timing of nephrology referrals, and ensure kidney-risk appropriate interventions.

Kidney Risk Score and Timing of Nephrology Referrals
 The Kidney Risk Score (KRS) is based on the validated 4-Variable Kidney Failure Risk Equation and recommended to help risk-stratify and refer kidney patients in a timely manner^{1,2}. The Kidney Risk Score provides a **5 and 2 year risk** of kidney failure using estimated glomerular filtration rate (eGFR) in mL/min/1.73m² and urine albumin:creatinine ratio (ACR) in mg/g.
 Starting in September 2023 the Kidney Risk Score can be ordered as a bundled test in Centra containing both a urine albumin:creatinine ratio (ACR) and serum eGFR (order "**Kidney Risk Score**" test code: **KFRCR**). Primary care providers **must order** a regular chemistry panel (basic metabolic panel, comprehensive metabolic panel, or renal panel) in order to check serum electrolytes.

5 Year Kidney Risk Score guides timing of referrals

- > 5% over 5 years: Nephrology office consult is **RECOMMENDED**
- 1-5% over 5 years: Nephrology eConsult is **SUGGESTED** if available
- < 1% over 5 years: Nephrology eConsult is **OPTIONAL** if available

2 Year Kidney Risk Score guides timing of referrals and management of advanced kidney failure

- > 10% over 2 years: Nephrology office consult is **RECOMMENDED**
- > 20 to 40% over 2 years: start planning for kidney transplant, dialysis, or other options, including palliative care and maximum medical management without dialysis

The Kidney Risk Score provides periodic risk stratification of CKD patients to guide patient management. The KRS **should not be ordered** for routine/frequent lab monitoring, acute kidney injury (AKI) or in the setting of acute illness or inpatient care (e.g., volume depletion, hospitalization, etc.).

If the Kidney Risk Score is not available, the Kidney Risk Score can be calculated manually at: <https://kidneyfailure.risk.com/>

© 2023 Intermountain Health. All rights reserved. Clinical Program Name #198 Clinical Guideline | 1

ROCHESTER REGIONAL HEALTH

A New Level of Care—Just for You

Introducing the CKM Health Pilot Program at Bay Creek

From Your Primary Care Team

Because you're a Bay Creek patient and part of the Employee Health Plan, you've been selected to join an exciting new pilot program designed to take your health care one step further.

We're proud to launch the **CKM (Cardiovascular-Kidney-Metabolic) Health Pilot Program**—and we're inviting YOU to be a part of it.

So, What is CKM?

CKM stands for Cardiovascular-Kidney-Metabolic syndrome.

It's a new way of supporting your health by looking at how conditions like:

- High blood pressure
- Diabetes or prediabetes
- Heart health
- Kidney function

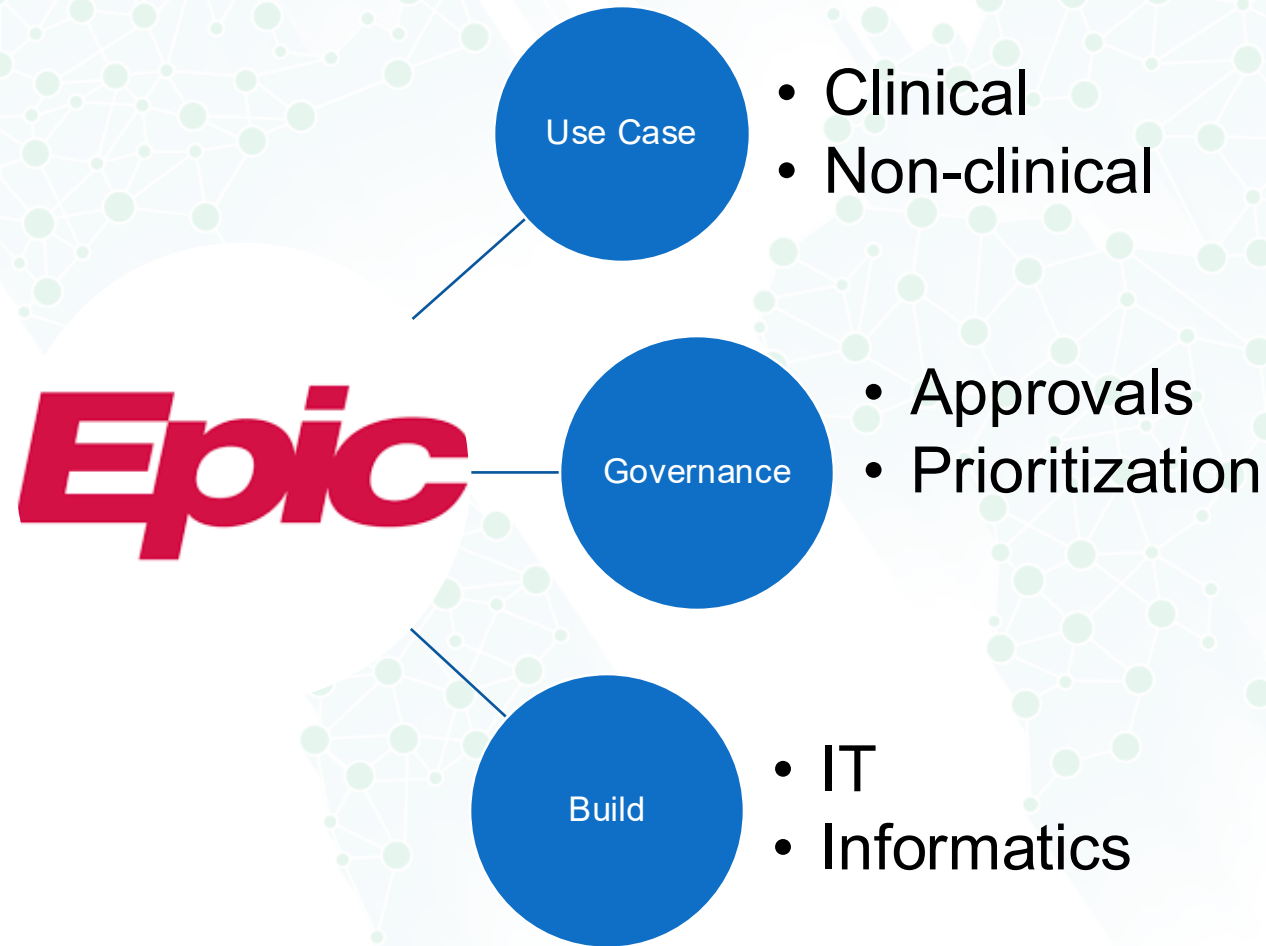
...are all connected. We want to **stay ahead of problems—not wait for them to happen**. This program helps us do just that.

Why Does This Matter?

Even with regular checkups, some health risks can go unnoticed. Here's what the data tell us:

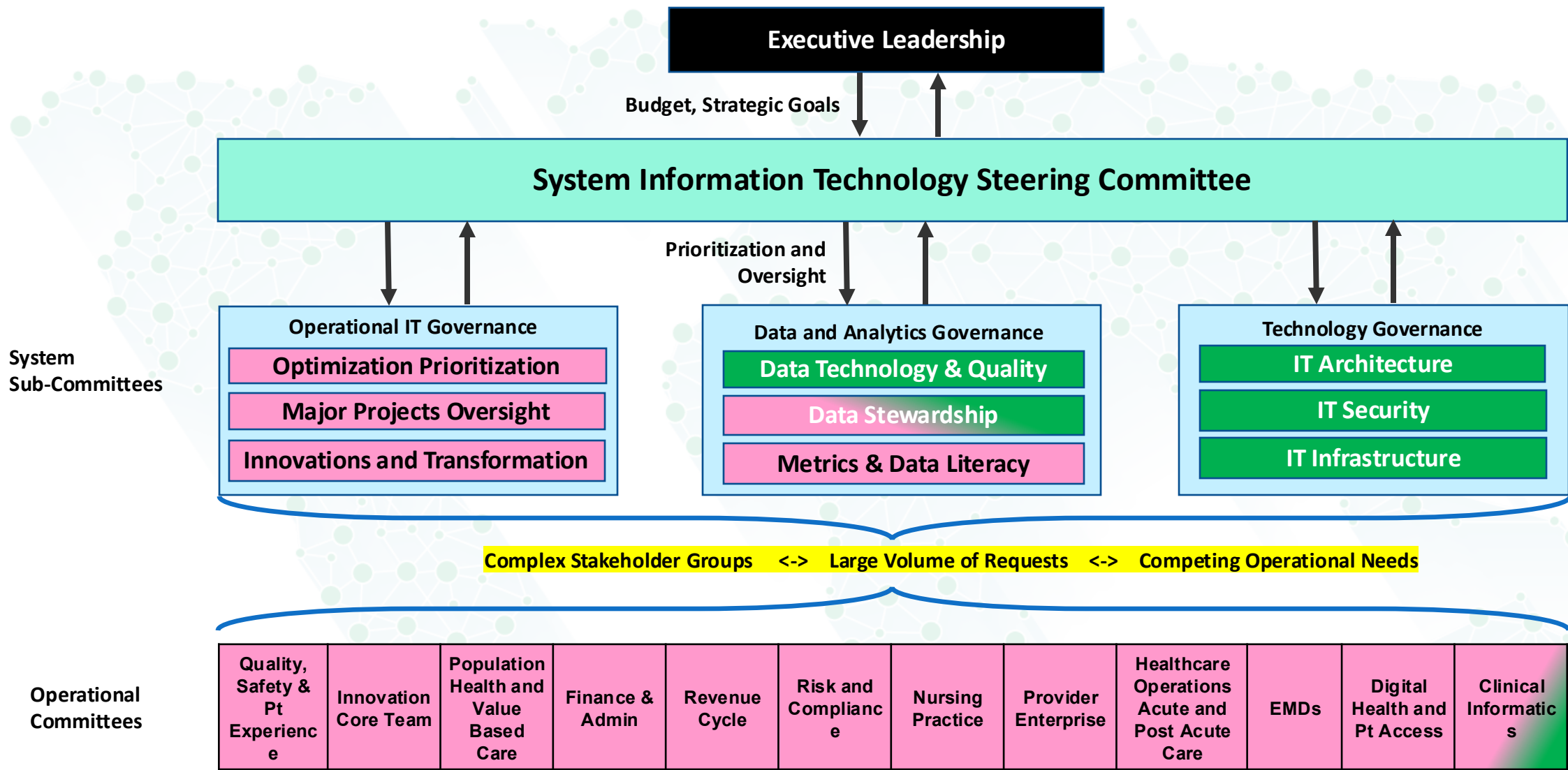


Technology in a U.S. Healthcare System



Top 14 Fastest Growing New Technologies in 2025





= Clinical/Administrators = Creators/Developers

IT Development Resource Mapping



Red denotes maximum allocation of IT resources

Implication for new technology adoption:

- de-prioritization of existing projects (☹️)

- need for outsourcing (\$\$\$)



IMPLEMENTATION OF GUIDELINES IN HEALTHCARE SYSTEM IT PLATFORMS

Provide examples of implementation of chronic kidney disease (CKD) guidelines using existing information technology (IT) platforms

Bulk Lab Order EPIC Implementation

Lab	Problem List CKD 1-3 or NOS	Problem List CKD 4-5
ACR	1x / yr.	1x / yr.
CBC		1x / yr.
Renal Function	1x / yr.	2x / yr.

Cohort Based on Problem List

Labs Ordered Automatically (bypass PCP)

High Risk Criteria (any of the following):

- CKD 4-5
- > 20% decrease in eGFR from previous value
- ACR > 300 mg/g

30,084 CKD patients

5518 met high risk criteria

38% increase in high-risk classification

EPIC CKD Registry Justification



MyPractice

Effective October 21, 2021

CKD Risk Scores added to CKD Registry High Risk Patients - PCP in My Login Department Report

Beginning October 2021 three new columns will be added to the CKD Registry High Risk Patients PCP in My Login Department Report. These risk score columns, 2 year and 5 year risk of kidney failure, consider 4 factors in the calculation: age, sex, eGFR, and ACR.

The 3rd column, CKD risk level displays a green flag or a red flag depending on the calculated risk.

- Red flag (> 20% 2-year risk of kidney failure) pre-ESKD care planning strongly recommended
- Green flag (< 5% 5-year risk of kidney failure) nephrology referral optional, consider e-Consult

If all factors are in Epic a risk score will be calculated.

CKD Registry High Risk Patients - PCP in My Login Dept [48146114] as of Wed 10/20/2021 1:32 PM

Patent	Care Team Nephrologist	Last Nephrologist Seen	Last Seen Date	Last Neph Visit	Next Neph Visit Date	Last PT Outback	Last PT Outback Type	CKD Stage	2 YR CKD Risk Score %	5 YR CKD Risk Score %	CKD Risk Level
Patent 1									28.1	79.1	Red
Patent 2									?	?	Red
Patent 3									?	?	Red
Patent 4									18.86	63.36	Red
Patent 5									?	?	Red
Patent 6									?	?	Red
Patent 7									12	34	Green
Patent 8									8.36	1.10	Green
Patent 9									?	?	Red
Patent 10									?	?	Red

- Provide clinical decision support to improve **timing of referral** to nephrology
- Assist in **shared decision making** with patients and **care coordination** between primary care and specialists
- Create foundation for process improvement and **better accountability**
- **Drive revenue growth** via shared savings from improved care across contracts



CKD Risk Equation Calculator

Decision support and guide to identify high risk patients

2 & 5 year risk level calculated based on age, sex, eGFR, and ACR



= < 5% 5-year risk of kidney failure
nephrology referral optional, consider e-Consult



= > 20% 2-year risk of kidney failure
Pre-ESKD care planning *strongly* recommended

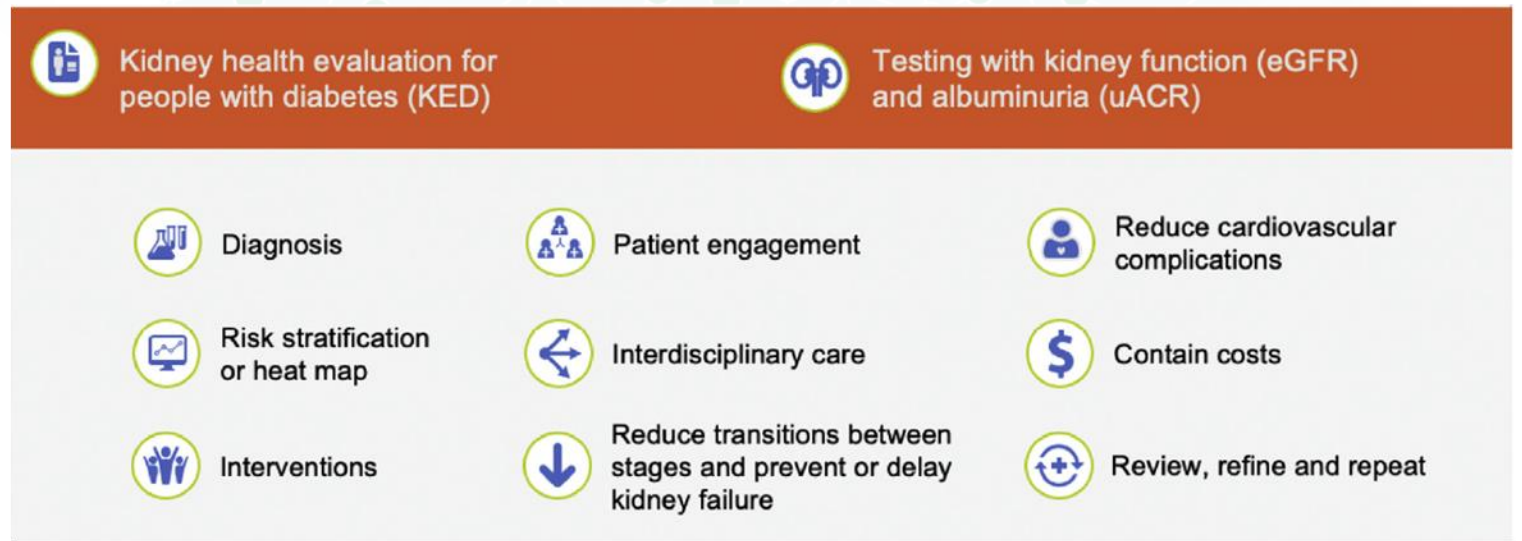
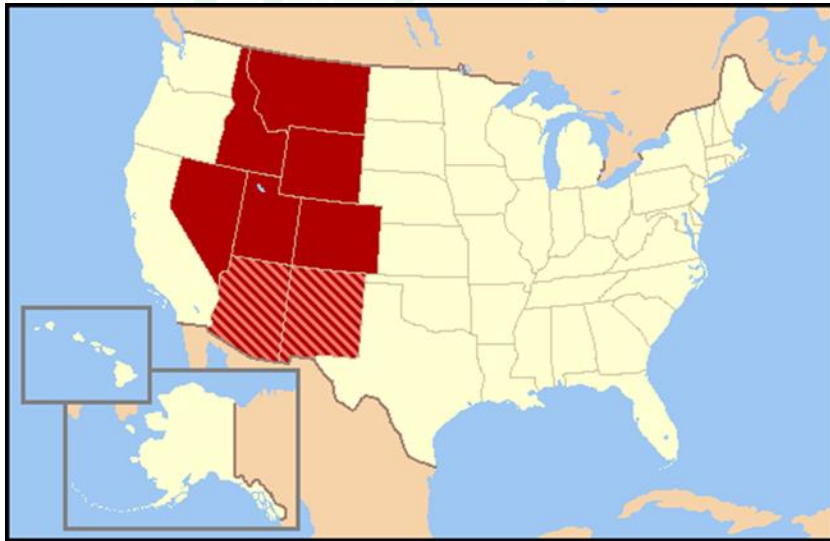


= Missing data

EPIC Columns

2 YR CKD Risk Score %	5 YR CKD Risk Score %	CKD Risk Level
70.1	97.7	▼
1.5	4.6	▼
?	?	
2.7	8.2	
?	?	
0.8	2.4	▼
11.7	32.1	
69.9	97.6	▼
14.5	38.7	
0.8	2.6	▼

Implementing Integrated CKD Care at Intermountain Health

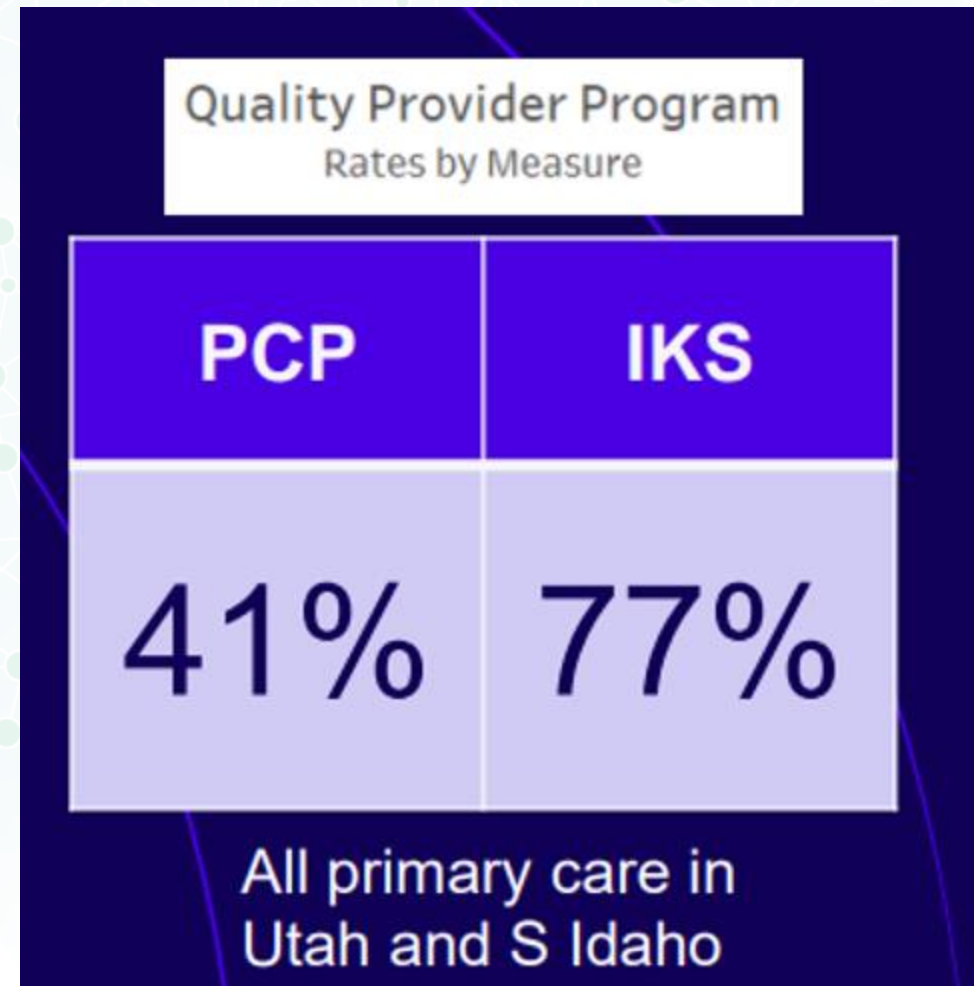


How to Double Guideline Recommended CKD Risk Screening and Stratification

Barriers to Implementation:

- Gaps in primary care knowledge of KDIGO guidelines
- Misalignment of quality incentives
- Resistance by nephrologists to ACR
- Lack of individual or practice data
- **Urine ACR (when ordered) often done months apart from eGFR**

System IT -
Enabled
Intervention



Bundled Orders in Cerner EHR

Forced Simultaneous Blood and Urine Testing =
Rebranded “**Kidney Risk Score**”

EGFR and ACR order linked
so blood/urine done together



Order generates a calculation of the patient's risk of progressing to kidney failure using the 4-variable Kidney Failure Risk Equation (KFRE) calculation.

All Nephrologists & APPs Enrolled in SelectHealth
Quality Provider Incentive Program

Intermountain CKD Care Process Model

Kidney Risk Score and Timing of Nephrology Referrals

The Kidney Risk Score (KRS) is based on the validated 4-Variable Kidney Failure Risk Equation and recommended to help risk-stratify and refer kidney patients in a timely manner^{1,2}. The Kidney Risk Score provides a **5 and 2 year risk** of kidney failure using estimated glomerular filtration rate (eGFR) in ml/min/1.73m² and urine albumin-creatinine ratio (ACR) in mg/g.

5 Year Kidney Risk Score guides timing of referrals

- > 5% over 5 years: Nephrology office consult is RECOMMENDED
- 1-5% over 5 years: Nephrology eConsult is SUGGESTED if available
- < 1% over 5 years: Nephrology eConsult is OPTIONAL if available

2 Year Kidney Risk Score guides timing of referrals and management of advanced kidney failure

- > 10% over 2 years: Nephrology office consult is RECOMMENDED
- > 20 to 40% over 2 years: start planning for kidney transplant, dialysis, or other options, including palliative care and maximum medical management without dialysis

Risk-Appropriate, More Reliable Referrals



IKS Visits Summary

Referrals Summary

KRS Volumes

Patient Details

Referral and Visit Timing

Information Tab ⓘ

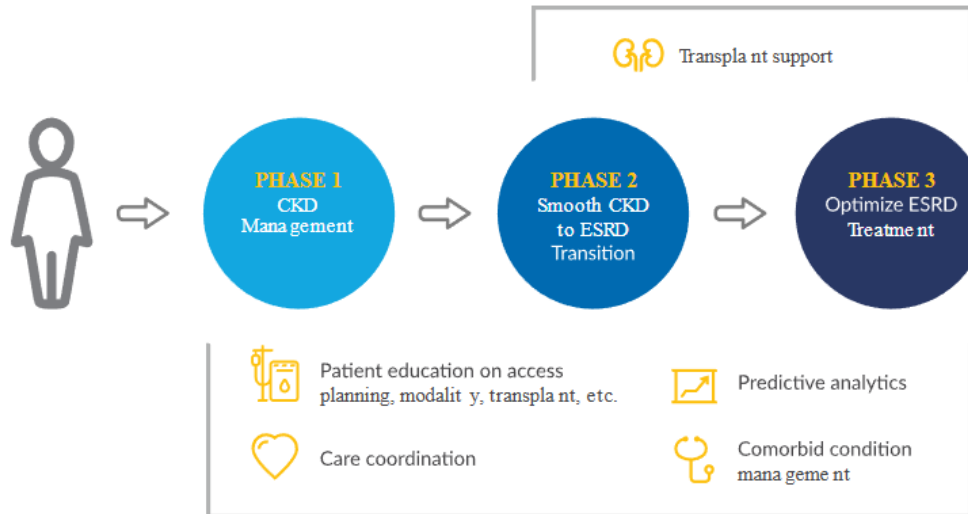
- 2000 diabetics risk stratified by KRS (KFRE) per month
- 75% of patients referred based on KRS are seen by nephrology within 60 days



3RD PARTY TECHNOLOGY TO SUPPORT GUIDELINE IMPLEMENTATION

**Opportunities and challenges to adoption of external technology solutions
by healthcare systems**

Opportunities for 3rd Party Technology



Problem: Physicians have to access multiple electronic platforms

Solution: DaVita OneView™ consolidates CKD patient data and hospital admission/discharge/transfer (ADT) feeds into dialysis EHR

Problem: EPIC and other major vendors lack kidney-specific applications

Solution: DaVita offers its own version of EPIC, CKD-EHR™ with KDIGO Guidelines embedded in workflows

Challenges to 3rd Party Technology

Changing Physician Behavior

- Difficult without strong economic incentives.
- Adoption curve: early adopters vs. majority of laggards

Need for Human-Centered Implementation

- RNs and care teams armed with data play a key role
- Technology must be paired with coaching, nudging, and tailored strategies

Cultural and Cost Barriers

- Healthcare systems are wary of data sharing with 3rd parties
- 3rd parties are profit maximizers, health systems are expense minimizers

Takeaway Points

- Adoption of new technology requires executive sponsorship, intra-organizational diplomacy, and **justification per health system strategy**
- New application of existing technology can drive guideline-informed care by enabling **better collaboration between nephrologists and primary care** within health systems
- **Technological solutions still rely heavily on human elements** that require behavior change, trust, and economic incentives to succeed

Acknowledgements



Jayson V. Pagaduan, PhD, DABCC
Medical Director- Chemistry Best Practice Team
Laboratory Director- Intermountain Life Flight



Seth Southwick, MHA
Assistant Vice President – Intermountain
Kidney Services



Matt Brill,
VP of Healthcare Technology
DaVita Integrated Kidney Care



THANK YOU

PERSPECTIVES FROM HEALTHCARE SYSTEM ADMINISTRATORS AND POLICY MAKERS