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Clinical Issue

Diabetic kidney disease (DKD) is a significant microvascular complication of diabetes mellitus and the most common cause of End-Stage Renal Disease (ESRD) in the United States.

American Diabetes Association (ADA) guidelines in 2025 recommend screening children and adolescents with type 1 diabetes (T1D) starting at puberty or ≥ 10 years old after having diabetes ≥ 5 years, and for those with type 2 diabetes (T2D) starting at diagnosis.

At Seattle Children's Hospital primary clinic, as of June 1, 2024, our uACR screening rate for eligible T1D and T2D patients was 71%.

Objective

To improve albuminuria screening rates among youth and young adults with diabetes to detect DKD earlier, start appropriate treatments, and prevent additional morbidity and mortality with progression to ESRD.

AIM Statements

GLOBAL AIM

To improve the diagnosis of DKD, with the hope of delaying or preventing the progression to ESRD.

SMART AIM

From June 1, 2024 to June 1, 2025, we aim to Improve albuminuria screening for eligible youth and young adults with diabetes seen at Seattle Children's Hospital primary clinic by from 71 to 81%.

Methods

We created clinic process maps and KDD after soliciting feedback from key stakeholders (providers, patient/family representatives, MAs). See [Figures 1 & 2](#).

Several Plan-Do-Study-Act cycles were conducted for each intervention and DKD screening rates were analyzed monthly using statistical process control (See [Figure 5](#)).

We partnered with a data analyst and biostatistician to obtain data from EHR. We also utilized Microsoft smart forms for surveying providers/MA, in person interviews, paper forms and chart reviews.

METHODS

Figure 1 – Process Map

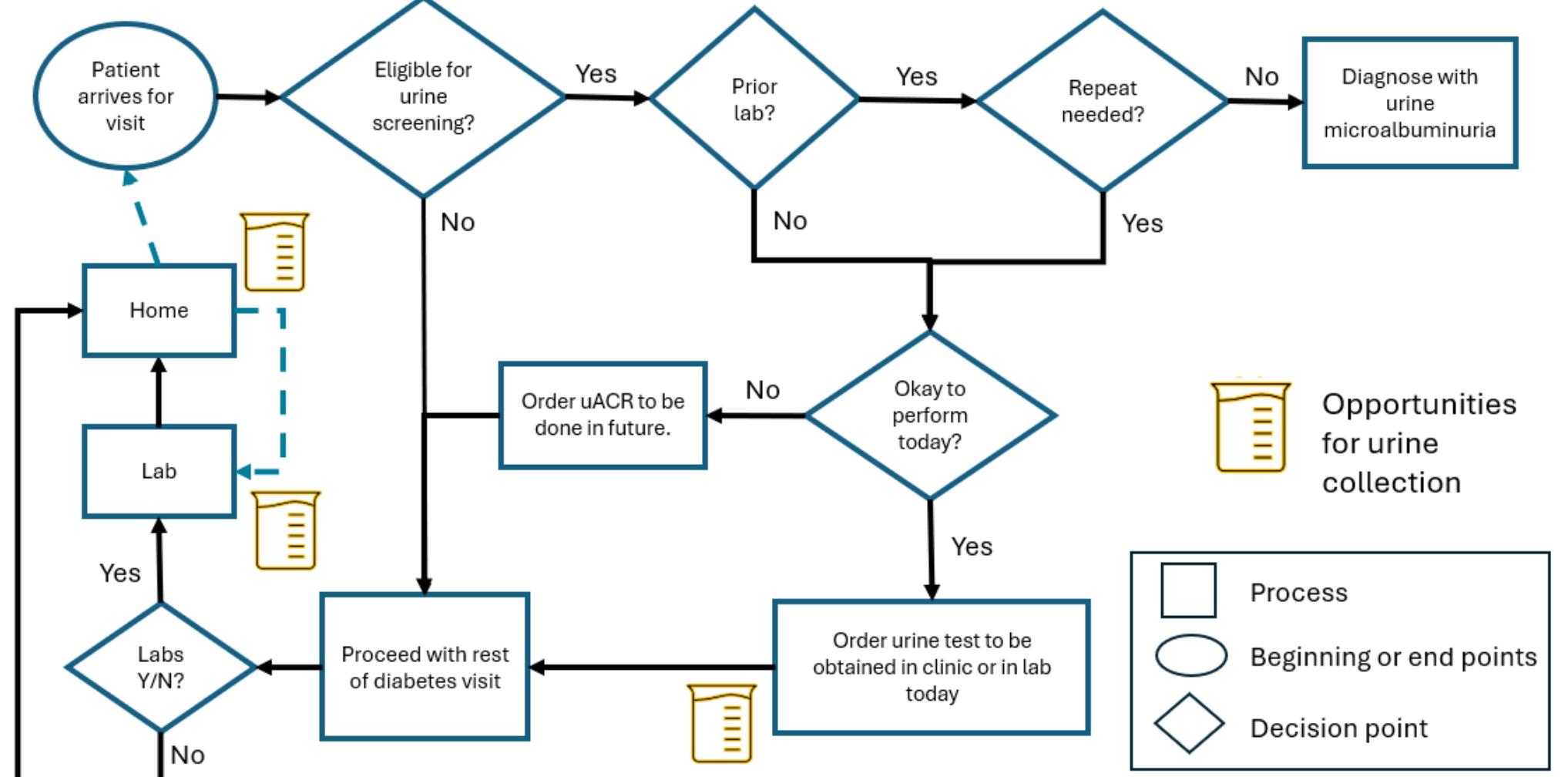
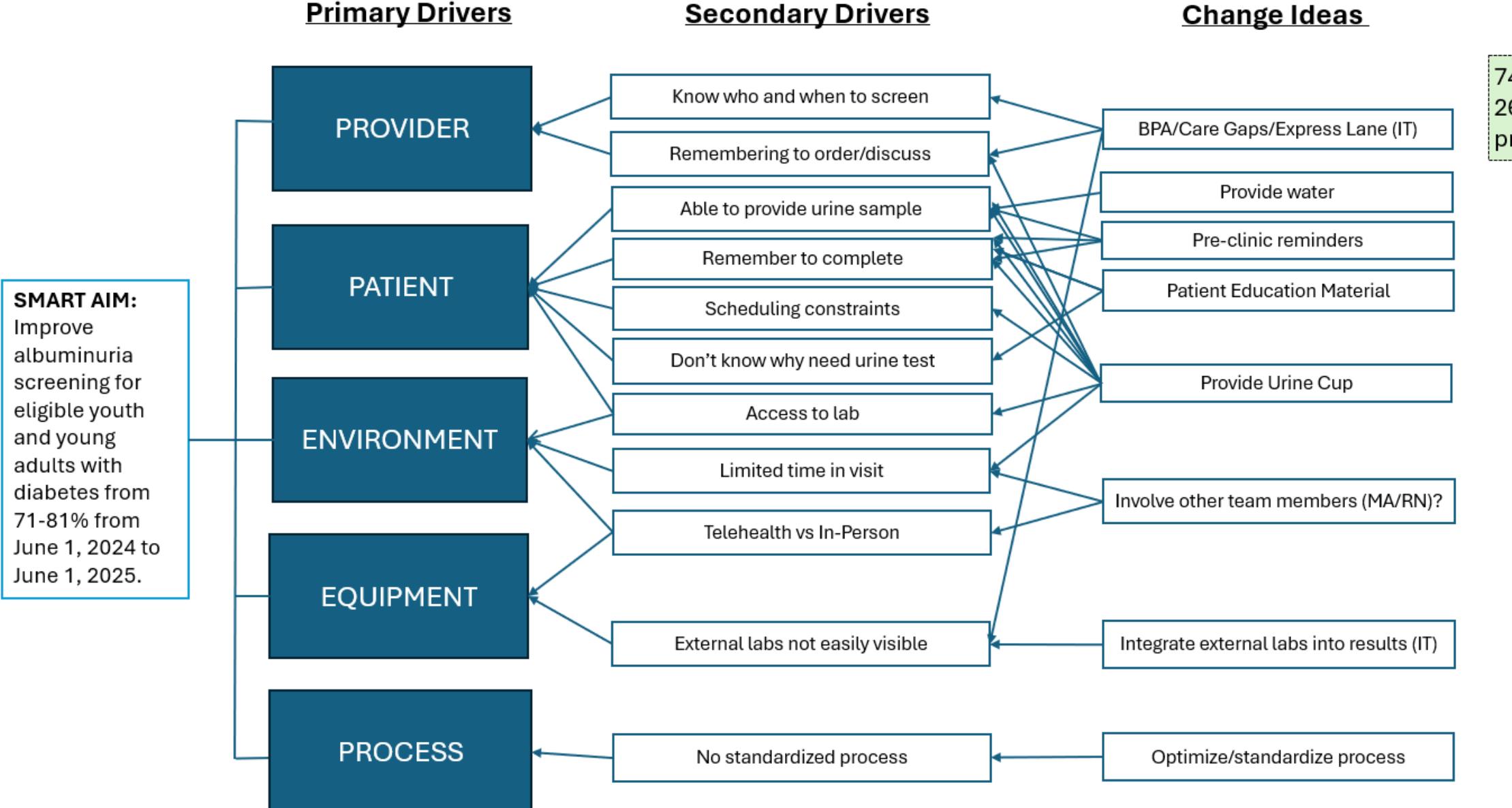


Figure 2 – Key Driver Diagram



INTERVENTION

Who/Where: T1D + T2D patients at primary clinic who were eligible for urine screening (ADA 2025)

Interventions:

- 1) **June-July 2024:** Utilizing an electronic health record (EHR) smartform for providers to communicate with medical assistants (MA) which patients are due for DKD screening
- 2) **Nov 2024 – Feb 2025:** MAs sending pre-clinic MyChart messages to patients informing them of DKD screening at upcoming visit
- 3) **June – Sept 2025:** MA handing a urine cup to the provider for all diabetes patients ≥ 10 yo, and provider deciding if patient is due for urine screening (bring urine cup into room to discuss with the patient)

Figure 3 – Process Measure for Intervention 2

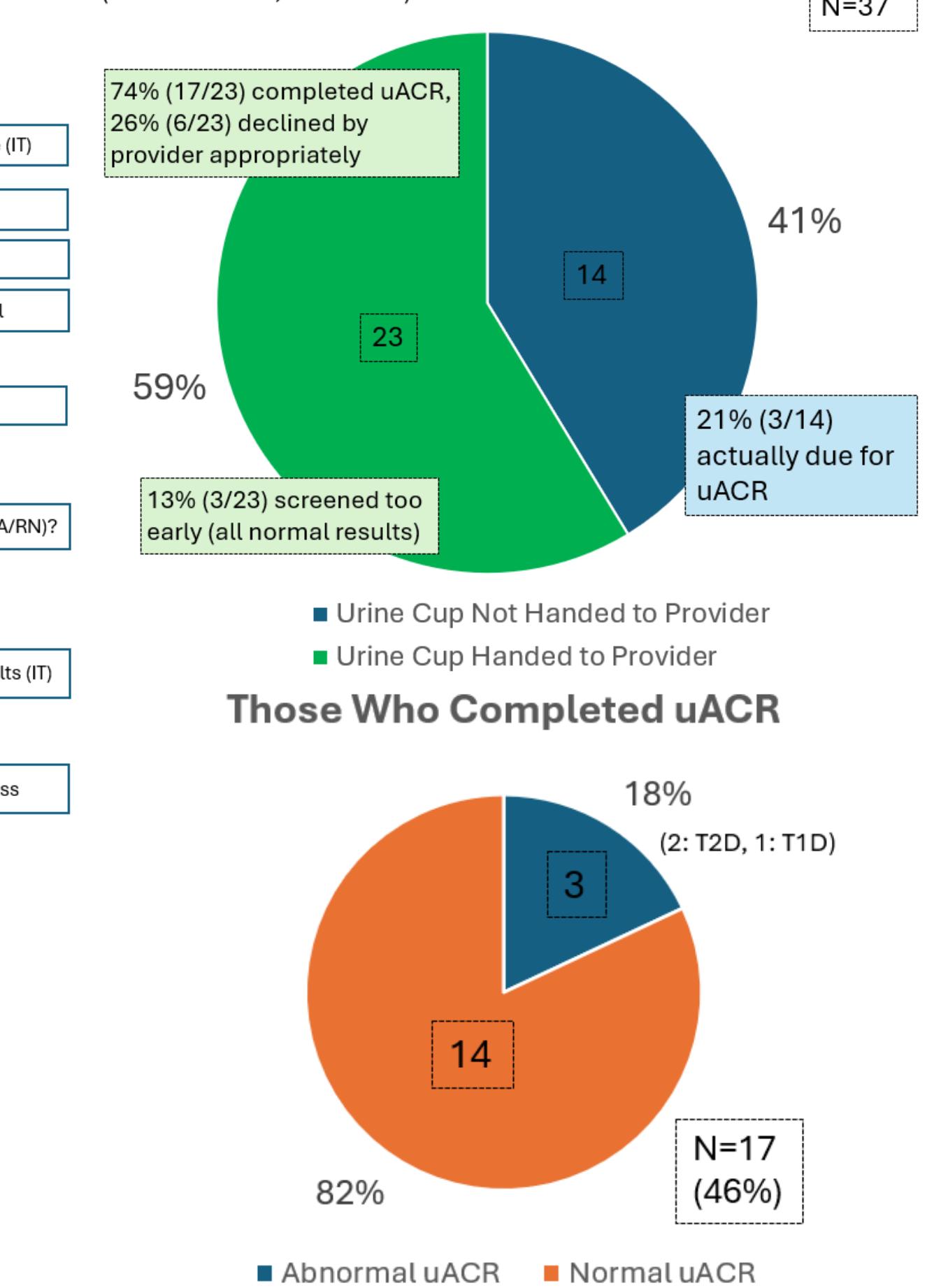
MyChart Messages statistics:

| Initial Message | Month/Year | # Sent | # Read | % Read | Clinic Prep |
|-----------------|------------|--------|--------|--------|-------------|
| | Nov 2024 | 49 | 14 | 28.5% | 0 |
| | Dec 2024 | 148 | 90 | 60.8% | 4 |
| | Jan 2025 | 192 | 136 | 70.8% | 19 |
| | Feb 2025 | 174 | 121 | 69.5% | 19 |

| Delayed Message | Month/Year | # Sent | # Read | % Read | 0 urine samples from home |
|-----------------|------------|--------|--------|--------|---------------------------|
| | Nov 2024 | 42 | 26 | 61.9% | |
| | Dec 2024 | 97 | 64 | 66.0% | |
| | Jan 2025 | 130 | 93 | 71.5% | |
| | Feb 2025 | 162 | 126 | 77.8% | |

Figure 4 – Process Measure for Intervention 3

All Patients ≥ 10 YO Sampled For Intervention 3 (11 clinics total, 4 of 5 MAs)



MEASURES (Figures 3 & 4)

Process: % of eligible T1D & T2D patients with completed urine screening

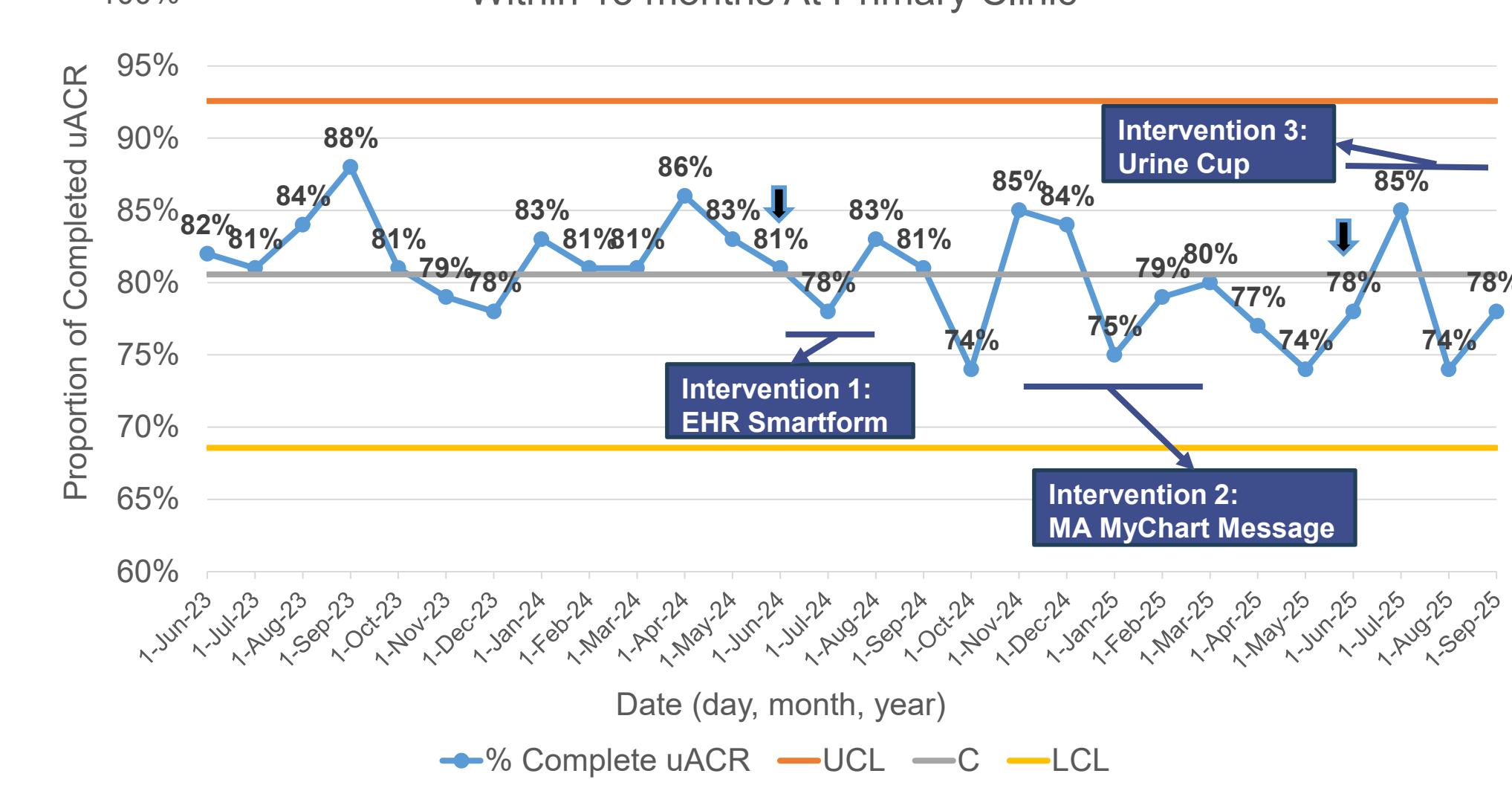
- Intervention 1:** Chart review, provider/MA feedback survey
- Intervention 2:** MyChart messages sent/read
- Intervention 3:** MA self documentation of urine cup status, chart review

Balancing: % of false positive albuminuria screens

- Has not been evaluated yet

Results

Figure 5: Proportion of Eligible Patients with uACR Completed Within 15 months At Primary Clinic



The EHR Smartform intervention (Intervention 1) was difficult to incorporate into standard clinic workflow at our primary clinic. We pivoted to pre-visit MyChart patient reminders with Intervention 2, which was not sustainable given significant MA effort required. Intervention 3 was designed to reduce MA and burden with the same goal of obtaining a urine sample in clinic.

Initial data showed screening rates did not increase by June 1, 2025 (71->65.3%). Given our interventions focused on in-clinic urine collection, we adjusted the data to only include those seen in clinic that month. Similarly, no improvement was seen with this adjustment (75->74%). Lastly, we learned our providers were not ordering urine tests until the patient was due or past due. However, by extending the length of uACR completion from 12 to 15 months (Figure 5), there was still no increase in screening rates after a year (81->78%).

Conclusions

We did not reach our Smart Aim goal:

- Improving urine collection in clinic may not improve overall screening rates.
- Most providers order urine tests after uACR is due or past due.
- Future interventions targeting provider behavior and barriers outside of clinic may be beneficial.

Next Steps

- Asking providers to obtain urine screening if patients are due before next follow up and utilizing EHR tool (Care Gaps) to identify patients who are "due soon".
- Explore % of in-person vs telehealth visits - consider interventions to help telehealth visits.