

Preliminary Findings for Wisconsin Laboratories

Background

Chronic kidney disease (CKD) affects 1 in 9 adults in the US. It is often under-diagnosed and under-treated resulting in lost opportunities to detect CKD early and prevent or slow progression to chronic kidney failure. Over 25 organizations have come together to form a coalition to improve care given to patients with chronic kidney disease in the states of Michigan, Minnesota, North and South Dakota, and Wisconsin. To assist in this goal, the Early Referral Workgroup of the coalition sought to identify labs that were automatically reporting eGFR (estimated glomerular filtration rate) when a serum creatinine was ordered by the ordering physician as a practical way to detect, evaluate and manage people with CKD. A program was developed to collect information from laboratories that would provide knowledge on opportunities to develop education for primary care providers and others to identify practice changes to reduce chronic kidney disease.

Method

Laboratory demographic information for CLIA (Clinical Laboratory Improvement Amendments) was collected from each of the state CLIA programs. A questionnaire was developed that asked labs about their practices of eGFR calculation. The State of Wisconsin was chosen as the pilot state to complete the questionnaire. The questionnaire was forwarded by mail to CLIA-certified laboratories in the state of Wisconsin. Results were received at a central office via facsimile and mail over a period of four weeks.

Results

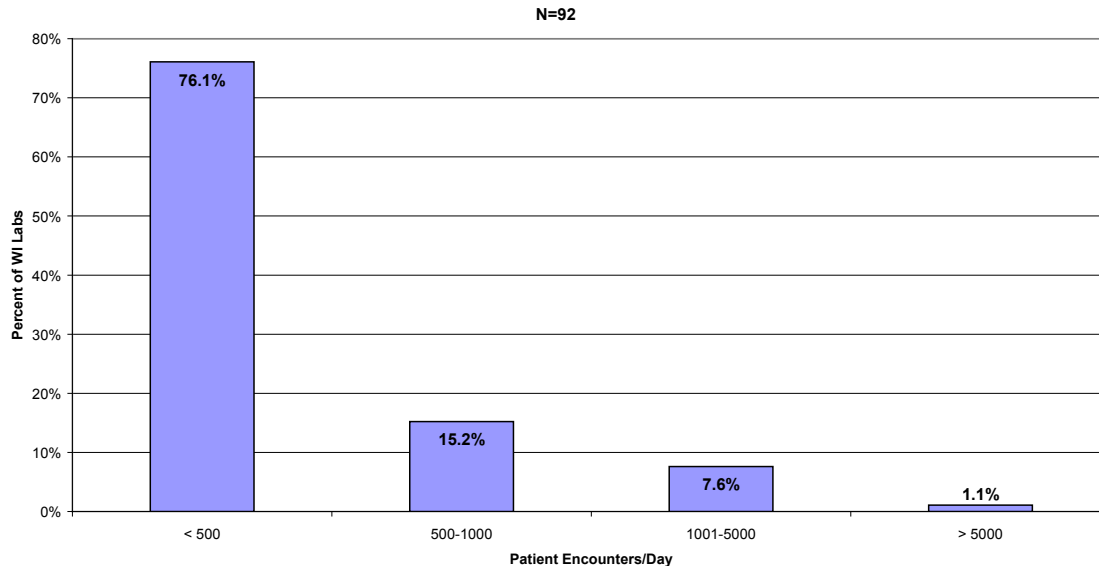
1. Participation. A total of 166 laboratories received the invitation to complete the questionnaire. Nearly two-thirds of labs completed and returned the questionnaire. Figure 1 shows a breakdown of questionnaires that were received. A small number of laboratories became ineligible to participate due to creatinine testing not being a part of their scope of testing. Laboratory eligibility was only determined for those labs that actually completed the questionnaire.

Lab Action	Number of Labs	Percentage of Labs
Returned Questionnaire	95	57.3%
Ineligible due to lab type	13	7.8%
No response from lab	58	34.9%
Total Number of WI Labs	166	100%

2. Lab Characteristics. Laboratories that participated in the project were asked if the location of their lab was hospital-based, clinic-based, independent, or other. The majority (83%) of labs were part of a hospital-based system. The size of the lab also returned similar results, with over 3/4 of labs having fewer than 500 patient encounters per day, as shown in Figure 2.

3. eGFR Reporting. The questionnaire also asked labs about their eGFR reporting practices when a physician orders a serum creatinine. Three-fourths of labs in Wisconsin reported that either they or their reference laboratory currently automatically calculate and report eGFR on the patient lab report when a serum creatinine is ordered by the physician. All labs with 500 patient encounters or greater include the eGFR calculation on the patient report. However, 1/3 of the labs with fewer than 500 patient encounters include calculation and reporting of eGFR. Ten labs that completed the questionnaire also cited additional specifi-

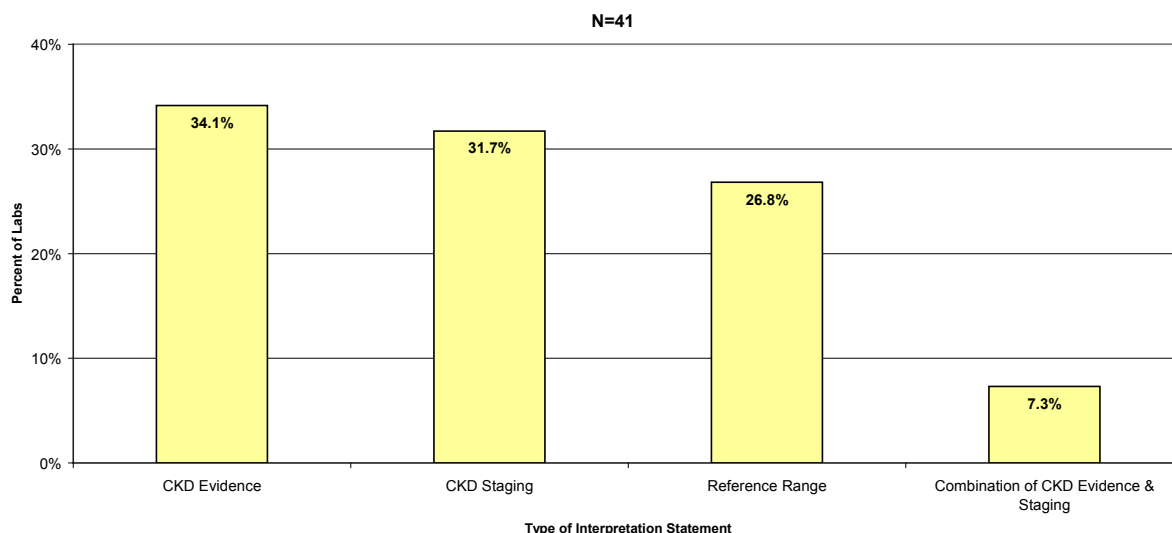
Figure 1. Patient Encounters among Wisconsin Labs, December 2007



cations for how eGFR is reported from their lab. Some of these eGFR reporting specifications among labs include pediatric patients not reported, only inpatient results are reported, only outpatient results are reported, eGFR reported only when specific panels are ordered, and only when abnormal creatinine results are reported. Another five labs also stated that eGFR is only calculated when the ordering physician requests the calculation.

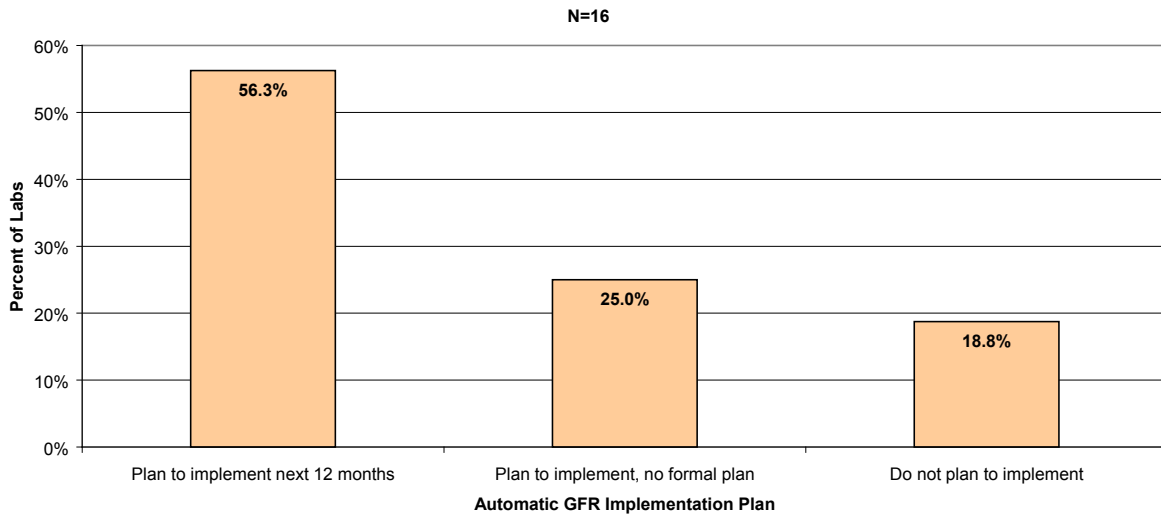
- eGFR Calculation and Interpretation.** Nearly all labs who report eGFR (90%) use the MDRD (Modification of Diet in Renal Disease) formula to calculate eGFR. Labs not using the MDRD formula relayed that they were unsure of the formula used in their laboratory to calculate eGFR. Labs who did currently calculate and report eGFR were asked if they included any additional information on the patient report that provided guidance to the physician. 54% of labs include a statement to assist the physician with eGFR interpretation. The interpretation statements used included staging of chronic kidney disease, evidence of CKD, and listing the reference range, as shown in Figure 2. In addition, 78% of labs also include written instructions for interpreting the eGFR value for African-American and non-African-American patients. Nearly all labs (98%) reported these statements directly on the patient reports, with one lab providing an electronic link to the interpretive statements.

Figure 2. eGFR Interpretation Statements among Wisconsin Labs, December 2007



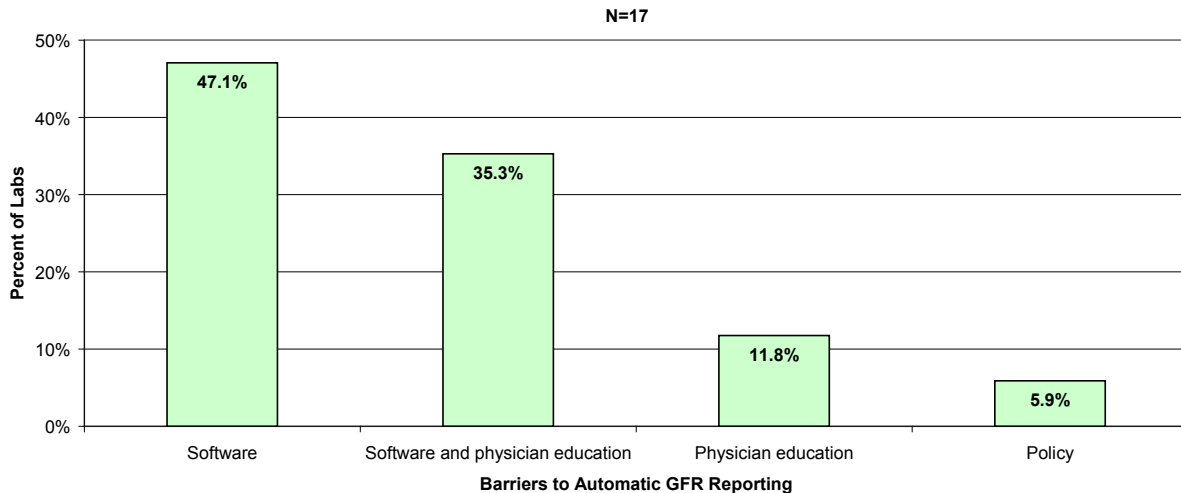
5. Plans for eGFR Reporting. About one-fourth (25.5%) of labs stated that no automatic calculation of eGFR was being conducted. From these labs, nine documented their implementation plan for eGFR reporting in the future. Figure 3 shows the breakdown of these plans, with 81% of these labs planning to implement eGFR report, but only a third with implementation plans in the next 12 months.

Figure 3. WI Lab Implementation Plan for GFR Reporting, December 2007



6. Barriers to eGFR Reporting. Of the 24 labs who did not currently report eGFR, several barriers to implementation were cited. Figure 4 summarizes these barriers, but the greatest barriers to implementation included software limitations and physician education. Of these labs, a significant number of labs that stated their eGFR goals focused on improvement of physicians ordering eGFR calculation, in lieu of automatic eGFR reporting by labs.

Figure 4. Barriers to Automatic GFR Reporting by Wisconsin Labs, December 2007



7. Technical Assistance Requests. Of the 24 labs who do not report eGFR, 18 answered the technical assistance question. 10 labs (55%) would be open to technical assistance to implement automatic reporting.

Conclusions

Based on this pilot project in Wisconsin, some basic conclusions can be made. The majority of labs in Wisconsin are reporting eGFR when a serum creatinine is ordered by the physician. Practices among labs on what information is printed along with the eGFR calculation varied among labs, but the majority of labs include eGFR interpretive statements. The MDRD formula for eGFR is exclusively used for calculating values. Of the labs who do not currently report eGFR, three-fourths of them plan to implement automatic reporting, and about half of them would be receptive to technical assistance with eGFR reporting implementation, even though several labs cited barriers with software, physician education, and policy.

These conclusions have assisted the workgroup in identifying the next steps of this project, which will include primary care physician education on identifying patients for CKD screening and subsequent eGFR interpretation, as well as development of lab best practices on automatic eGFR reporting implementation. However, prior to taking these next steps, the workgroup has placed its focus on assessing the lab practices and technical assistance needs across the other four states in which the coalition participates. The states of Michigan, Minnesota, and North and South Dakota will receive the same questionnaire as piloted in Wisconsin. As data is received and analyzed, an updated report will be posted to http://www.esrdnet11.org/coalition/ckd_early_referral.asp. Once the full data set is obtained, the coalition can focus on developing strategies in education, best practices, and technical assistance to assist the community to improve care given to CKD patients the Upper Midwest region.

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